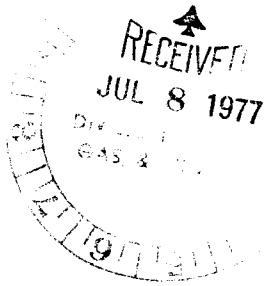
SHELL OIL COMPANY
1700 BROADWAY
DENVER, COLORADO 80202

July 5, 1977

Subject: Shell-Federal-Harvey 1-10A
Section 10-T32S-R1E
Garfield County, Utah

State of Utah
Department of Natural Resources
Division of Oil & Gas
1588 W. North Temple
Salt Lake City, Utah 84116



Attention Mr. C. B. Feight

Gentlemen:

The redrill of the captioned well on an unorthodox location is based on (1) a request from the Forest Ranger of the Dixie National Forest to move in a northeasterly direction as shown on the surveys and (2) move an ample distance from the original well to avoid interference from the original plugged well. Shell controls all acreage within a 660' radius of the proposed well.

Yours very truly,

R. Planty
Division Operations Engineer
Rocky Mountain Operations Office

KWL:ts

CIRCULATE TO:
DIRECTOR
PETROLEUM ENGINEER
MINE COORDINATOR
ADMINISTRATIVE ASSISTANT
ALL
RETURN TO
FOR FILING

Form DOGC-1a

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS

5. Lease Designation and Serial No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

6. If Indian, Allottee or Tribe Name

1a. Type of Work
DRILL XX DEEPEN ☐ PLUG BACK ☐

7. Unit Agreement Name

b. Type of Well
Oil Well XX Gas Well ☐ Other Single Zone ☐ Multiple Zone ☐

8. Farm or Lease Name
Federal-Harvey

2. Name of Operator
Shell Oil Company

9. Well No.
1-10A

3. Address of Operator
1700 Broadway, Denver, Colorado 80290

10. Field and Pool, or Wildcat
Wildcat

4. Location of Well (Report location clearly and in accordance with any State requirements.*)
At surface
1089' FWL & 1289' FNL Section 10

11. Sec., T., R., M., or Blk. and Survey or Area
NW/4 NW/4 Section 10-T32S-R1E

At proposed prod. zone

14. Distance in miles and direction from nearest town or post office*
Approximately 35 miles from Bicknell, Utah

12. County or Parrish 13. State
Garfield Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any)	16. No. of acres in lease	17. No. of acres assigned to this well
1089'	2560	40
18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft.	19. Proposed depth	20. Rotary or cable tools
490'± from orig 1-10	8800' Elbert	Rotary

21. Elevations (Show whether DF, RT, GR, etc.)
9746 Ungraded Ground

22. Approx. date work will start*
July 1, 1977

23. PROPOSED CASING AND CEMENTING PROGRAM

Size of Hole	Size of Casing	Weight per Foot	Setting Depth	Quantity of Cement
See Attachment #2				

Attachments:
1. Drilling Prognosis
2. Survey Plat
3. Casing Program

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
Signed R. Plaudy Title Div. Opers. Engr. Date MAY 27 1977

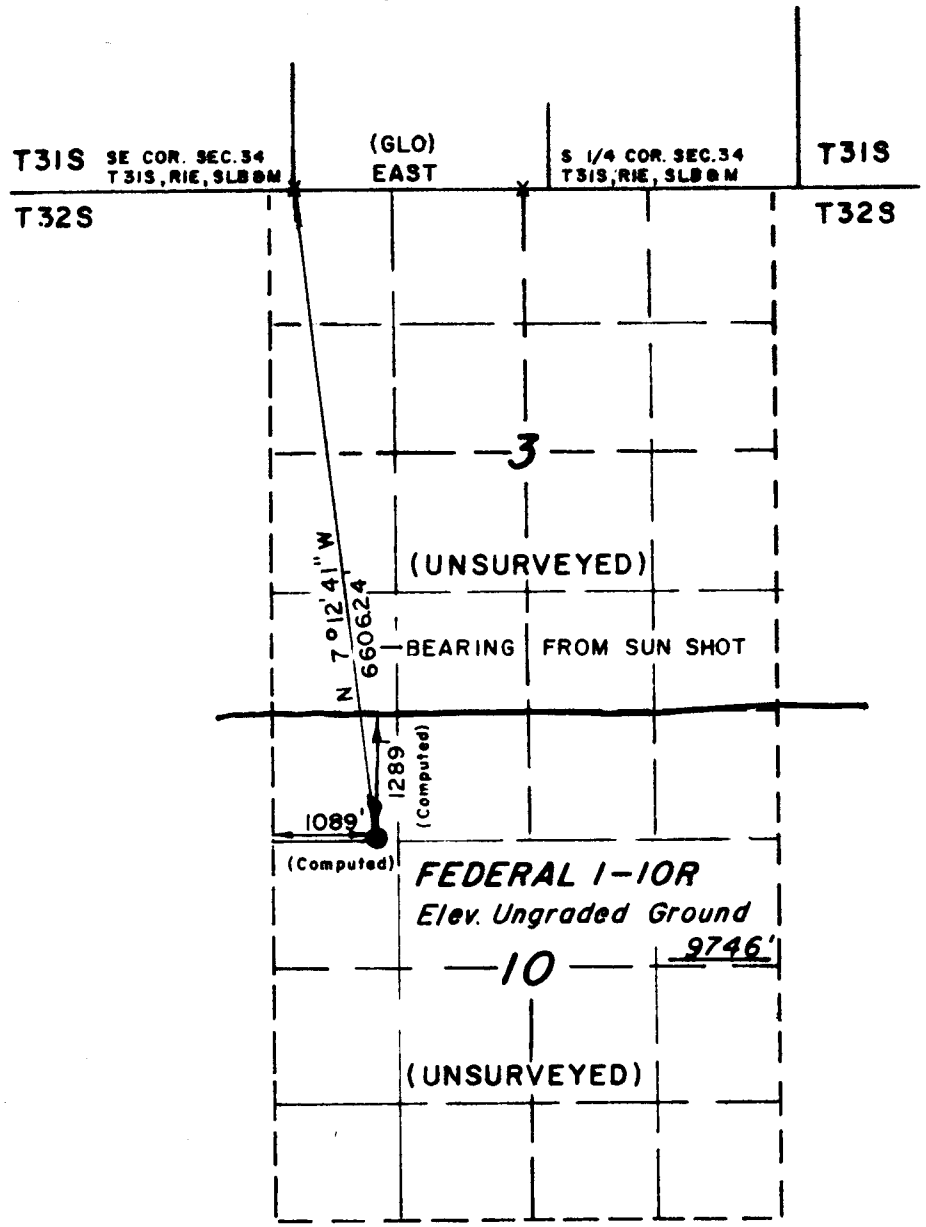
(This space for Federal or State office use)

Permit No. 43-047-30096 Approval Date

Approved by Title Date
Conditions of approval, if any:

*See Instructions On Reverse Side

T32S, R1E, S.L.B.&M.



X = Section Corners Located (Brass caps)

NOTE: DATA FOR SECTIONS WAS TAKEN FROM PROTRACTION DIAGRAM & MAY DIFFER FROM FUTURE SURVEYS.

PROJECT

SHELL OIL COMPANY

Well location, FEDERAL Nº 1-10R, located as shown in the NW 1/4 NW 1/4 Section 10, T32S, R1E, S.L.B.& M., Garfield County, Utah.

CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
REGISTRATION Nº 2454
STATE OF UTAH

UINTAH ENGINEERING & LAND SURVEYING
P. O. BOX Q – 110 EAST - FIRST SOUTH
VERNAL, UTAH - 84078

SCALE 1" = 2000'	DATE 5/16/77
PARTY D.A. D.S. J.L. G.P.	REFERENCES UTAH PROTRACTION DIAGRAM Nº 34
WEATHER Warm	FILE SHELL OIL CO.

STATE OF UTAH
DIVISION OF OIL, GAS, AND MINING

** FILE NOTATIONS **

Date: June 1-

Operator: Shell Oil Co.

Well No: Fed. - Harley 1-10A

Location: Sec. 10 T. 32S R. 1E County: Garfield

File Prepared [✓] Entered on N.I.D. [✓] (API # ✓)

Card Indexed [✓] Completion Sheet [✓]

CHECKED BY:

Administrative Assistant AW

Remarks:

Petroleum Engineer ok RJ

Remarks:

Director JF

Remarks:

INCLUDE WITHIN APPROVAL LETTER:

Bond Required [ ] Survey Plat Required [ ]

Order No. _____ [ ] Surface Casing Change to _____ [ ]

Rule C-3(c), Topographic exception/company owns or controls acreage within a 660' radius of proposed site [✓]

O.K. Rule C-3 [ ] O.K. In _____ Unit [ ]

Other:

[ ] Letter Written/~~Approved~~

July 11, 1977

Shell Oil Company
1700 Broadway
Denver, Colorado 80290

Re: Well No. Federal Harvey 1-10A
Sec. 10, T. 32 S, R. 1 E,
Garfield County, Utah

Gentlemen:

Insofar as this Division is concerned, approval to drill the above referred to well is hereby granted in accordance with Rule C-3(c), General Rules and Regulations and Rules of Practice and Procedure.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

PATRICK L. DRISCOLL - Chief Petroleum Engineer
HOME: 582-7247
OFFICE: 533-5771

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling.

Further, it is requested that this Division be notified immediately (within 24 hours) after drilling operations commence, and that the rig number and drilling contractor be identified.

The API number assigned to this well is 43-017-30074.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

CLEON B. FEIGHT
Director

Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: U-20707

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal-Harvey

2. NAME OF OPERATOR: Shell Oil Company

9. WELL NO.: 1-10R

3. ADDRESS OF OPERATOR: 1700 Broadway, Denver, Colorado 80290

10. FIELD AND POOL, OR WILDCAT: Wildcat

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1089' FWL & 1289' FNL Section 10
At proposed prod. zone

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW/4 NW/4 Section 10-T32S-R1E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 35 miles from Bicknell

12. COUNTY OR PARISH: Garfield

13. STATE: Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
1089'	2560	40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
490'± from orig 1-10	8800'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 9746 Ungraded Ground

22. APPROX. DATE WORK WILL START*: July 1, 1977
Drlg complete Oct. 1, 1977

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
See Attachment #2				

Attachments:
10 Pt. Check List
1. Drilling Prognosis
2. Casing & Cementing Program
3. Auxiliary Equipment
13 Pt. Land Use Plan
1. Survey Plat
2. Topo Maps (2)
3. Location Layout Plat

RECEIVED
JUN 20 1978
DIVISION OF OIL, GAS, & MINING

Note: Stipulations required for original Federal-Harvey 1-10 will be observed.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
SIGNED L. Plauche TITLE Div. Opers. Engr. DATE MAY 27 1977

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY (ORIG. SGD.) W. P. MARTENS TITLE ACTING DISTRICT ENGINEER DATE JUN 17 1978

CONDITIONS OF APPROVAL, IF ANY:

State of Utah, Department of Natural Resources
Division of Oil, Gas, and Mining
1588 West North Temple
Salt Lake City, Utah 84116

*See Instructions On Reverse Side

NOTICE OF APPROVAL

PLANNED
CASING, CEMENTING AND MUD PROGRAMS

CONDUCTOR CASING at approx. 700 '

Size	Weight	Grade	Connection	Length	Condition
24"	102#	X-42	STC	700'	NEW

Cement to be: HOWCO LITE TO SURFACE - CLASS "G" TAIL IN

SURFACE CASING at approx. 2000 '

Sec. No.	Size	Weight	Grade	Connection	Length	Condition
	16"	75#	K-55	STC	2000'	NEW

Cement to be: HOWCO LITE TO SURFACE - CLASS "G" TAIL IN

PROTECTIVE/~~PRODUCTION~~ CASING at approx. 5000 '

Sec. No.	Size	Weight	Grade	Connection	Length	Condition
	9 5/8"	40#	K-55	STC	1300'	NEW
	9 5/8"	36#	K-55	STC	3700'	NEW

Cement to be: HOWCO LITE TO 3000'. CLASS "G" TAIL IN.

~~PRODUCTION~~ LINER at approx. 5500 ' (IF NECESSARY)

Sec. No.	Size	Weight	Grade	Connection	Length	Condition
	7"	26#	K-55	LTC	*500-2000'	NEW.

Cement to be: CLASS "G" W/GEL. * DEPENDING ON DEPTH

Max. Anticipated BHP: 3080 psi @ 8800 ft.

Drilling Fluid: AERATED MUD

Well Name HARVEY FED. 1-10R

Field ZINC AREA

County GARFIELD

State UTAH

Attachment No. 2

DRILLING WELL PROGNOSIS

WELL NAME Shell - Harvey Federal 1-10F

TYPE WELL Wildcat

FIELD / AREA Zinc

APPROX. LOCATION (SUBJECT TO SURVEY) NW ¼ Sec. 10, T32S, R1E

EST. G.L. ELEVATION 9747' PROJECTED TD 8,800' OBJECTIVE Kaibab - Toroweap - Redwall

(+ 947) Surface formation: Volcanics (Tert.)

HOLE SIZE	CASING PROGRAM	LOGGING PROGRAMS	MAX DEV.	DEPTHS AND FORMATION TOPS	SPECIAL INSTRUCTIONS
17½" hole-open to 27"	24"	Two Man Mud Logging Unit	1° per 1000 feet	24" csg 700' +	SAMPLES: 10 ft: surface - 5000' 5 ft: 5000' - TD
17½" hole-open to 23"	16" to Surface	DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Son./GR/Cal; Dipmeter		Wasatch 975' (+8,772) Navajo 1,650' (+8,097) 16" csg 2,000±	CORES: Kaibab (50 ft); Toroweap (50 ft); Redwall (50 ft)
9 7/8" under-ream to 15"	9-5/8" to Surface	DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Son./GR/Cal; Dipmeter		Chinle 3,585' (+6,162) Moenkopi 4,405' (+5,342) 9-5/8" csg 5,000±	DST'S: Kaibab (1); Toroweap (1); Redwall (1) DEVIATION CONTROL Dogleg severity to be less than 1½° per any 100' interval.
8-3/4"	7" liner	DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Sonic/GR/Cal; Dipmeter		Timpoweap 5,040 (+4,707) Kaibab 5,285' (+4,462) Toroweap 5,467' (+4,280) 7" csg as required liner	CEMENT 24": cement to surface 16": cement to surface 9-5/8": cement bottom 2000' 7": entire liner length or bottom 2000'
6-1/8" as re-quired		DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Sonic/GR/Cal; Dipmeter		Atoka 7,374' (+2,373) Redwall 7,665' (+2,082) Elbert 8,790' (+957) TD 8,800'	MUD Surface - 700': Air 700' - 2000': Lime water/gel & air 2000' - 5000': Lime water/gel + parasite string @1900' ± 5000' - TD : Lime water/gel + parasite string @4500' ±

ORIGINATOR: D. G. Nordquist DATE 4/5/77 Revised 5/10/77

ATTACHMENT 1

ENGINEERING APPROVAL: D. G. Nordquist

OPERATIONS APPROVAL:

PETROLEUM:

OPERATIONS:

DIV. DRILLING SUPT.

U. S. GEOLOGICAL SURVEY
CONSERVATION DIVISION

_____ District Notified
_____ Mailed to D.E.

To: District Engineer, SLC

NID

Operator	Well	Location
Shell Oil Co	1-10R Fed-Harvey	Garfield Co Ut T. 32S, R. 1E NW NW 10

Lease No.	Ground elev.	Objective	Surface casing	Estimated T. D.
420707	9746	Org-Kaibab, Toroweap, Redwall	24" to 700'	8800

Formation	Possible resource	Estimated depth	Estimated thickness	Remarks *
Volcanics	—	0	975	
Wasatch	water	975	675	near top if any.
Navajo	water	1650	1935	may be fresh water near middle and at base
Chinle	—	3585	820	
Moenkopi	—	4405	635	
Timpoweap	—	5040	245	
Kaibab	oil/gas	5285	182	cored + DST
Toroweap	oil/gas	5467	1907	cored + DST
Aztec		7374	291	
Redwall	oil/gas	7665	1125	Cored + DST
Elbert		8790	TD	

Competency of beds at proposed casing setting points: good

Additional logs or samples needed: adequate

* Where applicable note:
1. Potential oil and gas productive zones
2. Zones bearing fresh water
3. Possible lost circulation zones
4. Zones with abnormal pressure
5. Zones with abnormal temperature
6. Other minerals such as coal, oil shale, potash, etc.

Signed: [signature]
Geologist

Date: 7/17/77

Oil and Gas Drilling

EA No. 1103

United States Department of the Interior
Geological Survey
8440 Federal Building
Salt Lake City, Utah 84138

Usual Environmental Analysis

Lease No. U-20707

Operator Shell Oil Company Well No. 1-10R

Location 1,089' FWL, 1,289' FNL Sec. 10 T. 32 S R. 1 E

County Garfield State Utah Field Wildcat

Status: Surface Ownership Public Minerals Public

Joint Field Inspection Date June 12, 1978

Participants and Organizations:

J. J. Smith	Drilling Supervisor, Shell
John Sheehan	Drilling Foreman, Shell
Marlin Jenson	Forest Service
Dan Baird	Forest Service
C. L. Creager	Shell
Arlen Brown	Brown Bros. Construction, Loa, Utah
John Evans	USGS

Related Environmental Analyses and References:

(1) EAR, Shell Oil Well 1-10 and 1-10R, Teasdale Ranger District, Dixie National Forest, Region 4.

(2)

Analysis Prepared by: John T. Evans
Environmental Scientist
Salt Lake City, Utah

Date June 16, 1978

Traffic Signs
Arch. Surv.

NOTED JOHN T. EVANS, JR.
6-16-78

E.A. No. 1103

Proposed Action:

On May 31, 1977, Shell Oil Company filed an Application for Permit to Drill the No. 1-10R exploratory well, an 8,800-foot oil and gas test of the Kaibab, Toroweap, and Redwall formations; located at an elevation of 9,747 feet in the NW¼ sec. 10, T. 32 S., R. 1 E., on Federal mineral lands and Public surface; lease No. U-20707. There was no objection raised to the wellsite nor to the access road.

A rotary rig would be used for the drilling. An adequate casing and cementing program is proposed. Fresh-water sands and other mineral-bearing formations would be protected. A blowout preventer would be used during the drilling of the well. The proposed pressure rating should be adequate. Details of the operator's NTL-6 10-Point Subsurface and 13-Point Surface Protection Plans are on file in the USGS District office in Salt Lake City, Utah, and the USGS Northern Rocky Mountain Area office in Casper, Wyoming.

A working agreement has been reached with the Forest Service, the controlling surface agency. Rehabilitation plans would be decided upon as the well neared completion; the Surface Management Agency would be consulted for technical expertise on those arrangements.

The operator proposes to construct a drillpad 350 feet wide by 400 feet long, and a reserve pit 150 feet by 175 feet. A new access road will be constructed 20 feet wide by .08 mile long from an existing and improved road.

If production is established, plans for production facilities will be submitted to the appropriate agencies for approval. The anticipated

starting date is June 18, 1978, and the duration of drilling activities would be about 120 days.

Location and Natural Setting:

The proposed drillsite is approximately 35 miles south of Bicknell, Utah, the nearest town. A road runs to within 0.08 mile of the location. This well is a wildcat well.

The existing environment is discussed in detail in the Forest Service EAR of the proposed action and is included by reference (copy attached).

Geology:

The surface geology is Wasatch. The soil is sandy clays and gravels. This is the second attempt to drill in this area and the operator is aware of the drilling problems previously encountered. The first attempt to drill resulted in a stuck joint of pipe when a cavern was encountered. The hole was abandoned when an attempt to free the pipe from the hole failed. Loss of circulation did occur.

Seismic risk for the area is major.

Anticipated geologic tops are filed with the 10-Point Subsurface Protection Plan.

Approval of the proposed action would be conditioned that adequate and sufficient electric, radioactive, density logging surveys would be made

to locate and identify any potential mineral resources. Production casing and cementing would be adjusted to assure no influence of the hydrocarbon zones through the well bore on these minerals. In the event the well is abandoned, cement plugs will be placed with drilling fluid in the hole to assure protection of any mineral resources.

The potential for loss of circulation would exist. Loss of circulation may result in the lowering of the mud levels, which might permit exposed upper formations to blow out or to cause formation to slough and stick to drill pipe. A loss of circulation would result in contamination due to the introduction of drilling muds, mud chemicals, filler materials, and water deep into the permeable zone, fissures, fractures, and caverns within the formation in which fluid loss is occurring. The use of special drilling techniques, drilling muds, and lost circulation materials may be effective in controlling lost circulation.

A geologic review of the proposed action has been furnished by the Area Geologist, U. S. Geological Survey, Salt Lake City, Utah. The operator's drilling, cementing, casing, and blowout prevention programs have been reviewed by the Geological Survey engineers and determined to be adequate.

Air:

No specific data on air quality is available at the proposed location. There would be a minor increase in air pollution due to emissions from rig and support traffic engines. Particulate matter would increase due to dust from travel over unpaved dirt roads. The potential for increased air pollution due to leaks, spills, and fire would be possible.

Relatively heavy traffic would be anticipated during the drilling operations phase, increasing dust levels and exhaust pollutants in the area. If the well was to be completed for production, traffic would be reduced substantially to a maintenance schedule with a corresponding decrease of dust levels and exhaust pollutants to minor levels. If the project results in a dry hole, all operations and impact from vehicular traffic would cease after abandonment. Due to the limited number of service vehicles and limited time span of their operation, the air quality would not be substantially reduced.

Toxic or noxious gases would not be anticipated.

Ground Water Hydrology:

Some minor pollution of ground water systems would occur with the introduction of drilling fluids (filtrate) into the aquifer. This is normal and unavoidable during rotary drilling operations. The potential for communication, contamination and commingling of formations via the well bore would be possible. The drilling program is designed to prevent this. There is need for more data on hydrologic systems in the area and the drilling of this well may provide some basic information as all shows of fresh water would be reported. Water production with the gas would require disposal of produced water per the requirements of NTL-2B.

The depths of fresh-water formations are listed in the 10-Point Subsurface Protection plan.

There would be no tangible effect on water migration in fresh-water aquifers. The pits would be unlined. The 1-10 well has been abandoned to the surface agency for conversion to a water well. The well will be

completed as a water well by the operator in return for use of the well water during drilling.

Flora and Fauna:

Vegetation consists of Aspen, Pinon-Juniper, salt-desert-shrubs, pine trees, and native grasses.

Wildlife:

Animal and plant inventory has been made by the Forest Service. No endangered plants or animals are known to inhabit on the project area. The fauna of the area consists predominatly of the mule deer, coyotes, rabbits, and varieties of small ground squirrels and other types of rodents and various types of reptiles. The area is used by man for the primary purpose of grazing domestic livestock and sheep.

The birds of the area are raptors, finches, ground sparrows, magpies, crows, and jays.

Social-Economic Effect:

Note → An on the ground surface archaeological reconnaissance would be required prior to approval of the proposed action. Appropriate clearances would then be obtained from the surface managing agency. If a historic artifact, an archeological feature or site is discovered during construction operations, activity would cease until the extent, the scientific importance, and the method of mitigating the adverse effects could be determined by a qualified cultural resource specialist.

There are no occupied dwellings or other facilities of this nature in the general area. Minor distractions from aesthetics would occur over the lifetime of the project and are judged to be minor. All permanent facilities placed on the location would be painted a color to blend in with the natural environment. Present use of the area is grazing, recreation, and oil and gas activities, and logging.

Noise from the drilling operation may temporarily disturb wildlife and people in the area. Noise levels would be moderately high during drilling and completion operations. Upon completion, noise levels would be infrequent and significantly less. If the area is abandoned, noise levels should return to predrilling levels.

The site isnot visible from a major road. After drilling operations, completion equipment would be visible to passersby of the area but would not present a major intrusion.

The economic effect of one well would be difficult to determine, but should this well discover a significant new hydrocarbon source, local, state, and possibly national economies might be improved. In this instance, other development wells would be anticipated, with substantially greater environmental and economic impacts.

Should the wellsite be abandoned, surface rehabilitation would be done according to the surface agency's requirements and USGS's satisfaction. This would involve leveling, contouring, reseeding, etc., of the location and possibly the access road. If the well should produce hydrocarbons, measures would be undertaken to protect wildlife and domestic stock from the production equipment.

Land Use:

The land is used for livestock and wildlife grazing, recreation and logging operations. Traffic conflicts may occur during certain periods of the operation. Several blind corners exist. Signs will be posted to alert motorists to heavy truck traffic.

There are no national, state, or local parks, forests, wildlife refuges, or ranges, grasslands, monuments, trails, or other formally designated recreational facilities near the proposed location. The location is in the Dixie National Forest.

Rock for surfacing drillpad will come from a nearby barrow pit.

A successful wildlife (water) pit was built by Shell Oil by lining pit with clay. This resulted in the only year-round pond during the recent drought. Shell proposes to build a second level after obtaining needed gravels.

Waste Disposal:

The mud and reserve pits would contain all fluids used during the drilling operations. A trash pit would be utilized for any solid wastes generated at the site and would be buried at the completion of the operations. Sewage would be handled according to State sanitary codes. For further information, see the 13-Point Surface Plan.

Alternatives to the Proposed Action:

1. Not approving the proposed permit--the oil and gas lease grants the lessee exclusive right to drill for, mine, extract, remove, and dispose

of all oil and gas deposits.

Under leasing provisions, the Geological Survey has an obligation to allow mineral development if the environmental consequences are not too severe or irreversible. Upon rehabilitation of the site, the environmental effects of this action would be substantially mitigated, if not totally annulled. Permanent damage to the surface and subsurface would be prevented as much as possible under USGS and other controlling agencies' supervision with rehabilitation planning reversing almost all effects. Additionally, the growing scarcity of oil and gas should be taken into consideration. Therefore, the alternative of not proceeding with the proposed action at this time is rejected.

2. Minor relocation of the wellsite and access road would not significantly reduce the environmental impact. There are no severe vegetative, animal or archaeological-historical-cultural conflicts at the site. Since only a minor impact on the environment would be expected, the alternative of moving the location is rejected.

At abandonment, normal rehabilitiation of the area, such as contouring, reseeding, etc., would be undertaken with an eventual return to the present status as outlined in the 13-Point Surface Plan.

Note → Traffic signs would be posted to warn motorists of heavy truck traffic.

The drillpad was rotated to minimize surface disturbance and avoid rock outcrops. Maximum disturbed area to be 400 feet by 480 feet. The pad was rotated 90^{o} to the east.

Adverse Environmental Effects Which Cannot Be Avoided:

Surface disturbance and removal of vegetation from approximately two acres of land surface for the lifetime of the project which would result in increased and accelerated erosional potential. Grazing would be eliminated in the disturbed areas and there would be a minor and temporary disturbance of wildlife and livestock. Minor induced air pollution due to exhaust emissions from rig engines of support traffic engines would occur. Minor increase in dust pollution would occur due to vehicular traffic associated with the operation. If the well is a gas producer, additional surface disturbance would be required to install production pipelines. The potential for fires, leaks, spills of gas, oil or water would exist. During the construction and drilling phases of the project, noise levels would increase. Potential for subsurface damage to fresh water aquifers and other geologic formations exists. Minor distractions from aesthetics during the lifetime of the project would exist. If the well is a producer, an irreplaceable and irretrievable committment of resources would be made.

Increased traffic over narrow mountain roads will result in an increased traffic hazard.

Determination:

This requested action does not constitute a major Federal action significantly affecting the environment in the sense of NEPA, sec. 102(2)(c).

District Engineer
U. S. Geological Survey
Conservation Division
Oil and Gas Operations
Salt Lake City District

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
82 North 100 East
Cedar City, Utah 84720

2820
June 14, 1978

Mr. E. W. Guynn, District Engineer
Oil and Gas Operations
USGS Conservation Division, 8426 Federal Bldg.
125 South State Street
Salt Lake City, Utah 84138

Dear Mr. Guynn:

Enclosed is a copy of the approved Environmental Analysis Report and an amendment to the EAR for the well proposed by Shell Oil Company on Oil and Gas Lease #U-20707, Teasdale Ranger District, Dixie National Forest. We feel that an EIS is not needed, and a negative declaration is attached.

The EAR, amendment, and Surface Management Operating Plan were carefully reviewed by our Staff Specialists. No comments were made.

The Forest Service approves of the project, subject to the Management Requirements and Constraints in the EAR, amendment and special use permit.

Teasdale District Forest Ranger Dan Baird is the Forest Officer authorized by the Forest Service to act as its local representative. He has prepared a special use permit amendment to cover use of National Forest lands by Shell outside of the lease boundary.

We continue to adhere closely to the new USGS/USFS Memorandum of Understanding.

Ralph S. Rawlinson

RALPH S. RAWLINSON, Chief
Branch of Lands Management

Enclosure

ENVIRONMENTAL ANALYSIS REPORT AMENDMENT

Shell Oil Company Prospecting Permit

Well No. 1-10 R

Teasdale Ranger District, Dixie National Forest, Region 4

Amendment prepared by _____ Date 6/13/78
District Forest Ranger

Approval of Amendment recommended by _____ Date 6/14/78
Chief, Recreation & Lands

Amendment approved by _____ Date 6/14/78
Forest Supervisor

This amendment is for a site 200 feet from location number 1-10. The new site appears identical to the old site and is immediately adjacent to it. New reserve and sump pits will be required. About 200 feet of new road will be built, plus an old barrow pit will be opened up. The special stipulations to protect the existing resources are as follows:

1. The new section of road, plus the old road which had been put to bed, will be closed and stabilized after operations have ceased.

2. The barrow pit will be left clean and shaped to the topography. It will be lined to prevent seepage of water and left for a livestock pond. Thirty feet will separate the existing pit area and the new pit area, plus the dike between will be lined with rocks in the natural channel to prevent washing.

3. The roads and location sites will be recovered with stockpiled topsoil and reseeded with the following seed mix per acre:

   3 lbs. sheep fescue (Festuca ovina)
   2 lbs. smooth brome grass
   2 lbs. intermediate wheatgrass

4. Shell Oil Company will provide for signing the roads to alert the public to the danger of heavy truck traffic.

5. The access roads from the site to state highway 24 will be protected from damage by regular maintenance as determined by the Forest Officer in charge. Factors used in determining needed maintenance will be amounts and size of traffic, plus weather conditions.

6. If damage occurs on the cattleguard near Big Lake, resetting may be required to protect it.

7. Water will be extracted from the drill hole on site #1-10 if possible. This hole will be left as prepared after operations are complete so the Forest Service can convert it to a livestock water well. If this well is unsatisfactory, water can be taken from Big Lake until it reaches the level of the ponds in the lake. At that point, water must be purchased from private irrigation companies below the Forest boundary.

ENVIRONMENTAL ANALYSIS REPORT 2820

Shell Oil Company Prospecting Permit

Teasdale Ranger District, Dixie National Forest, Region 4

Report prepared by _____ Date 8/15/75
District Forest Ranger

Approval of report recommended by _____ Date _____
Title

Report approved by _____ F. S. Date 8/28/75
Title

NEGATIVE DECLARATION

Shell Oil Company, Drilling
Lease #U-20707
Teasdale Ranger District
Dixie National Forest

The proposed activity is not considered to be a major Federal action significantly affecting the quality of the human environment (requiring an Environmental Statement pursuant to Section 102 (2) (C) of the National Environmental Policy Act of 1969 (PL91-190) or to be highly controversial. Those actions that could adversly affect the quality of the physical and biological components in the project and will be sufficiently minimized to prevent long-term environmental impacts. Overall social and economic effects of the proposal are considered to be beneficial. Consultation with others on the proposed project did not reveal significant adverse reaction. These determinations are based upon evaluations made in the attached Environmental Analysis Report.

However, if the wildcat drilling is successful in finding an oil and gas reservoir which will result in additional wells being drilled or transmission lines constructed, this development will be a major Federal action, requiring the preparation and submission of an Environmental Statement.

By: M. J. Bishop Date: 8/28/75

I. Summary of Proposed Project

Shell Oil Company proposes to drill a wildcat well, designated Harvey-Federal #1-10, Lease U-20707, on the Teasdale Ranger District, Dixie National Forest. This is the result of several years of study by various companies which included seismograph, vibroseis, electro-telemagnetic, and magnometer surveys. The tentative plans call for a 8,000 foot well to be completed over a sixty day period. The starting date has not been set; it will depend on when a drill rig is available. A winter operation is not planned.

II. Description

The proposed drill site is in the Antelope Springs Management Area of the Aquarius Planning Unit. It is in the NW¼, Section 10, T32S, R1E, SLB&M, Garfield County, Utah. It is on the north end of the Aquarius Plateau, approximately 35 miles south of Bicknell, Utah. The proposed site lies in a large, flat, closed basin at an elevation of 9750 feet. Vegetation on and adjacent to the site consists of silver sagebrush and grass. The drill site has a slight southerly aspect, and with the exception of a small livestock pond one mile south of the site, there is no live water in the vicinity.

Climate is harsh; there are less than 60 frost free days. The mean maximum temperatures for July and January are 76° and 32° and mean minimum are 48° and 6°. Average annual precipitation is 20", coming as winter snow and late summer rain.

The area is grazed by one band of sheep for a few days each year, and provides summer range for a small number of deer and antelope. Predators, small game and other animals and birds also summer in the area.

Soils are deep, gravelly loams and gravelly clay loams. Parent materials are andesite, latite, basalt, and mixed alluvium from these materials. Erosion potential is low. A system road runs within 550' of the site.

The purpose of this environmental analysis report is to insure implementation of appropriate requirements outlined in the EAR for Mineral Leases on the Teasdale Ranger District, and to provide special coordination as necessary to minimize the impact of the proposed project on other forest resources and uses.

The drilling permit will be issued by the U. S. Geological Survey Conservation Division, 8426 Federal Building, Salt Lake City, Utah 84138 - E. W. Guyman, District Engineer.

The leasee is Shell Oil Company, 1700 Broadway, Denver, Colorado 80202 - B. G. Jones, Drilling Superintendent.

III. Environmental Impact

With proper planning and permit administration, drilling the proposed oil well will have little impact on other forest resources and uses. The drill site will be 425' x 450' requiring a maximum of 2' cuts and fills to level. Fifteen miles of system road will be improved through spot gravelling and improved drainage. Five hundred fifty feet of 14' wide access road will be constructed between the existing road and the drill site. The travel and activity around the drill site will have a slight impact on livestock and wildlife; they will move away from areas where they are disturbed. As much as 15,000 gallons of water may be required daily. Water sources may not be available in the area at the time drilling is done. Water may have to be hauled from off forest.

1. Air

The air in the vicinity of the proposed well site is presently clean and pure with no known local pollution. Construction activity, travel on the access roads, power for the drill rig will degrade air quality through engine exhaust emmissions and dust. Smoke from burning wastes will also degrade air quality unless burned when atmospheric conditions are such that rapid smoke dissipation is possible.

The noise level will also increase many times as the activity increases. With exception of an occassional motor vehicle, there is presently little noise in the area.

2. Soil

The soil of the area is relatively stable, and because soil disturbing activities will occur on areas with little or no slope, erosion potential is low. Light amounts of sheet erosion is occurring on the area. The existing road is not adequately drained and contributing to the soil loss in several areas. Water accumulation and improper drainage on the new road and drill pad could increase soil loss if not properly drained.

3. Water

There is no live water in the vicinity of the drill site, or close to proposed road. Of primary concern is where water used in the drilling operation (15,000 gallon per day) can be obtained. If it is hauled from the nearby small lakes, sufficient water must be left to meet wildlife and livestock needs. Depending on when drilling commences, the bulk of the water will probably have to be hauled from the Fremont River. The oil company will have to make arrangements with the irrigation

company. The drill site is in a small, closed basin and the possibility of water contamination through an oil spill or other accident is quite remote.

4. Vegetation

Vegetative ground cover is sparse on the drill site and proposed access road. It consists of scattered silver sagebrush and bunch grass, and small forbs. The project will have little effect on the vegetation except on the drill site and access road where it will be removed. When the project is complete, the drill site will be revegetated. The site will require special consideration including saving and respreading top soil, proper seed mix, fertilization, and protection fencing.

5. Wildlife and Fish

The proposed oil well will have little effect on wildlife and none on fish. The activity in the area and along access roads may cause some animals to move back into areas of less disturbance. The movement of animals will be of little significance due to the vast amount of summer range in the area. If the water needed for the drilling operation is hauled from nearby Big Lake, Hay Lake, or Cyclone Lake, excessive lowering of the water levels will have an adverse impact on wildlife and livestock. No deer winter range, sagegrouse nesting areas, Utah Prairie Dog towns or fisheries will be affected by the proposed drilling project. No threatened or endangered species are present or will be affected by the proposed project.

6. Social and Economic Uses

The development of a producing oil field would have a tremendous economic impact on the thinly populated Wayne and Garfield Counties. Garfield County would benefit from revenues of the oil produced, while Wayne County would receive most of the business from the workers who will live in Loa, Lyman, or Bicknell. Drilling of the proposed wildcat well will benefit Wayne County economy through local businesses (motels, cafes, service stations).

7. Outdoor Recreation

There will be very little impact on outdoor recreation from the drilling activity. The improved roads may slightly increase use in the area, however there is little to attract people.

8. Natural Beauty

The drill site will be cleared of vegetation and leveled, and .1 mile of new road constructed. These will be the only long term impacts on natural beauty of the area. The drill rig and associated equipment will have a detrimental impact on natural beauty for the short term (60 days), however smoothing over and reseeding the drill site when the job is completed will minimize the long term impact.

9. Wilderness

There is no wilderness existing or proposed that will be affected by the proposed drilling.

10. Timber

There will be no timber cut, or any impact on the timber resource by this project.

11. Range

The access road to the drill site will cross portions of the Dark Valley cattle allotment, and the site will be within the Lake Philo sheep allotment. The grazing season for cattle is 6/16 to 10/15 and 7/1 to 9/15 for sheep. Sheep feed the area of the drill site a few days each year and then move onto other portions of their range. The area to be taken out of production is small. More impact on livestock will result from the increased travel on the roads across the open range. All fences except one have cattleguards on the access road. The gate in the fence near Hay Lakes is in poor condition and not serviceable. The drill site will be restored to near natural condition when project is complete.

12. Historical and Archeological

The only areas that will be disturbed are .1 mile of new road and the 425' x 450' drill site. These areas have been thoroughly inspected by archeologist Larry Davis, and nothing of historical or archeological significance was found.

13. Mineral and Energy Resources

If a producing oil field is located, an Environmental Statement for the development of the area will be necessary to minimize conflicts with other forest resources and uses, and to look at alternatives and select the best one. The U. S. Geological Survey will be the lead agency in EIS preparation.

14. Transportation

The road betterment necessary to move heavy equipment and provide access to the site will improve 15.25 miles of Forest System roads. 6.25 miles of the Bicknell-Escalante Road and 9 miles of the Hay Lake Road will receive spot surfacing and improvements as necessary. When the project is completed, .1 mile of new construction into the drill site will be ripped, spread, and top soil replaced, and site restored to as natural a condition as possible. Borrow material will be taken from existing pit near Dog Lake. It will have to be reopened and then closed at the end of the job.

15. Public Safety

The drilling activity will cause a marked increase in traffic on the Bicknell-Escalante road and Hay Lake road. Adequate signing will be necessary to provide for safety of the other road users.

16. Fire

The area lies at a high elevation and usually receives frequent precipitation. Wild fire potential is low. Adequate precautions will be taken to prevent escape of waste fires, fires from welding or equipment.

IV. Summary of Probable Adverse Environmental Impacts that Cannot be Avoided.

There will be impacts of a temporary nature that cannot be avoided due to noise of equipment, periodic burning of waste, vehicle exhaust emmissions and dust. Other unavoidable impacts are the disturbance of soil and vegetation of the drill site and access roads. These impacts will be minimized by following prescribed regulations on mufflers, emission control, burning permits, revegetation of disturbed areas, approved road construction methods and watering dust when necessary.

V. Relationship Between Local Short Term Users of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity.

If a producing oil field is brought in, tremendous impacts on the environment could result. If this happens, these impacts will be evaluated in an Environmental Statement for the development. If the site proves to be unproductive, long-term impacts will be minimal. Even though the drill site is smoothed over with top soil and reseeded, signs of man's activity will be present for many years.

A producing oil field will provide future energy for an oil deficient nation. If it is not productive the cost of exploration will be born indirectly by the American public.

VI. Irreversible and Irretrievable Commitment of Resources

There will be no irreversible or irretrievable commitment of resources allocated by the proposed project. If a producing field is located, an Environmental Statement will be necessary and will consider this, as the depletion of oil supplies will be irretrievable.

VII. Alternatives

The only feasible alternative to the proposed wildcat well is not drilling it, or drilling at another location. The proposed drill site is so located that environmental impacts will be minimal and any other site in the area would increase the conflicts with forest resources and users.

Not drilling the well is a valid alternative, however due to the minimal environmental impacts, and the present and projected energy shortages, it is in the best interest of the American people to develop energy where environmentally feasible.

There has been sufficient study the past six years to warrant the drilling of an exploratory well.

VIII. Consultation with Others

This project has been discussed on the ground with the U. S. Geological Survey representative, Ron Alexander, and environmental constraints and coordinating requirements evaluated.

Mark Hilliard, Wildlife Conservation Officer from the Utah Division of Wildlife Resources, is familiar with the area and has no adverse feelings to the project. Clint Peterson, sheep permittee of the drill site, was contacted and felt there would be no major problems for him. The project was also discussed with Derrell Albrecht, Chairman, Wayne County Commission. He was concerned about hauling heavy equipment across the Fremont River, and recommended the Bicknell bridge not be used by heavy trucks. He is in favor of the orderly, planned, development of the county's resources. The feeling in Wayne County is generally in favor of resource development.

Dale Marsh of the Garfield County Commission was also contacted, and he felt the same way, in favor of the orderly development of the county's natural resources. He also requested that the oil company be required to maintain roads and leave them as good as they were prior to the project.

The proposed wildcat drilling project is not controversial or will it have major environmental or economic impacts; public hearings or meetings are not necessary.

IX. Management Requirements and Constraints

The following requirements and recommendations are necessary to insure a minimum impact on National Forest resources and other forest uses.

1. Approve the proposed drilling permit contingent upon the following coordinating requirements.
2. Sprinkle water on roads and drill site if dust becomes excessive.
3. Burn waste only when clearing index is over 500.
4. Equip all equipment with proper muffling devices.
5. Reshape road and install proper drainage.
6. Maintain water in lakes at the level recommended by District Forest Ranger.
7. Construct sump pit of sufficient size to prevent overflow, and seal if necessary.
8. Remove and stockpile top soil when leveling drill site on completion of project.
9. Spread top soil and reseed .1 mile access road and drill site when project is complete with the following seed mix:

Species	Lbs./Acre
Smooth brome	5
Hard fescue	3
Orchard grass	3
Timothy	3
	14

10. Fertilize with ammonium nitrate at the rate of 100 lbs. per acre.
11. Scarify site to smooth and cover seed by pulling a drag over it.
12. Fence drill site from livestock with a net wire fence. Fence will have to be maintained at least three years to allow establishment of vegetation.

13. Install 14' cattleguard and gate in fence near Hay Lake.

14. Maintain historic and archeologic values if any of significance are located.

15. Insure the preparation of an Environmental Statement for development if a producing oil field is discovered.

16. Maintain, improve as necessary, and insure adequate drainage of 15.25 miles of forest system roads that will be used for access to the site.

17. Save top soil, respread, fertilize and reseed barrow pit and .1 mile of access road.

18. Provide at least four signs cautioning thepublic of increased traffic on the road.

19. Insure all equipment have proper spark suppressors.

20. Prevent wild fires through issuance of burning permits.

X. Environmental Statement Recommendation

The proposed wildcat well drilling project is not controversial nor will it have significant environmental impact. An Environmental Statement is not necessary.

XI. Appendix

1. General location map.

2. Negative Declaration

3. Copy of application to drill well from Shell Oil Company and all supporting data including the following:

   a. Shell Oil Co.'s application to USGS for oil well exploration drilling permit (USGS Form 9-331-G).

   b. Drilling well prognosis.

   c. Planned casing, cement and mud programs.

   d. Plat of proposed oil well Harvey Federal #1-10, T32S, R1E.

   e. Map showing proposed access to the well.

   f. Twelve Point Surface Use Plan for well location.

g. Oil and Gas Lease - Surface disturbance stipulations

h. Roadway Improvement and Drillsite Construction Plans.

i. Blowout Prevention, Wellhead and Auxiliary Equipment.

j. Location Layout Plat.

k. Archeological Site Survey

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116

June 30, 1978

Shell Oil Company
1700 Broadway
Denver, Colorado 80290

Re: WELL NO. FEDERAL-HARVEY 1-10A
Sec. 10, T. 32S, R. 1E,
Garfield County, Utah
August 1977 thru' May 1978

Gentlemen:

Our records indicate that you have not filed a Monthly Report of Operations for the months indicated above on the subject well(s).

Rule C-22, General Rules and Regulations and Rules of Practice and Procedure, requires that said reports be filed on or before the sixteenth (16) day of the succeeding month. This report may be filed on Form OGC-1b, (U.S.Geological Survey Form 9-331) "Sundry Notices and Reports on Wells", or on company forms containing substantially the same information. We are enclosing forms for your convenience.

Your prompt attention to the above will be greatly appreciated.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

KATHY OSTLER
RECORDS CLERK

Form OGCC-1 be

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED SEP 11 1978 DIVISION OF OIL, GAS, & MINING

1. OIL WELL ☐ GAS WELL ☐ OTHER Wildcat

2. NAME OF OPERATOR: Shell Oil Company

3. ADDRESS OF OPERATOR: 1700 Broadway, Denver, Colorado 80290

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1089' FWL & 1289' FNL Section 10

5. LEASE DESIGNATION AND SERIAL NO.: U-20707

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal-Harvey

9. WELL NO.: 1-10R

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW/4 NW/4 Section 10-T32S-R1E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 9746 GL

12. COUNTY OR PARISH: Garfield

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	X	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	X	(Other)			☐
(Other)		Sidetrack	X				

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Verbal contact w/W. Martens, USGS, 9/1/78

24" csg @ 700'
16" csg @ 1538' - 750 sx Class "G"
Drilled to 3634 & stuck pipe
Cut off DP @ 2652 - left 165' fish in hole (4-1/2" DP & 14-3/4" bit)
Set kick-off plug - 640 sx Class "G"
Dressed cement to 2049
Kicked off w/dynadrill
Presently drilling 14-3/4" hole in Navajo @ 2385
Mud weight 8.6
Will now set 9-5/8" csg @ 3585 (expected top of Chinle)

APPROVED BY THE DIVISION OF OIL, GAS, AND MINING
DATE: Sept. 11, 1978
BY: P. L. Driscoll

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE Sr. Engr. Tech. DATE 9/6/78

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

November 20, 1978

Shell Oil Company
1700 Broadway
Denver, Colorado 80290

Re: Well No. Federal - Harvey 1-10R
Sec. 10, T. 32S, R. 1E,
Garfield County, Utah

Gentlemen:

We are in receipt of your electric logs for the above mentioned well which have been marked "Light hole", Please refer to Rule C-5 (b), General Rules and Regulations and Rules of Practice and Procedure.

In order to hold this information confidential, we must have a letter from your company requesting that hthis date be withheld from open file. If we do not hear from you by December 5, 1978, we will assume that the information can be released.

Very truly yours,

DIVISION OF OIL, GAS, AND MINING

Kathy Avila

KATHY AVILA
RECORDS CLERK

CORE ANALYSIS RESULTS FOR

SHELL OIL COMPANY

HARVEY FEDERAL NO. 1-10R

WILDCAT

GARFIELD COUNTY, UTAH

SHELL OIL COMPANY
HARVEY FEDERAL 1-10R
WILDCAT
GARFIELD COUNTY

FORMATION : KAIBAB
DRLG. FLUID: WATER BASE MUD
LOCATION : SEC. 10-T32S-1E
STATE : UTAH

DATE : 10-5-78
FILE NO. : RP-3-2880
ANALYSTS : BH
ELEVATION: 9747' KB

CONVENTIONAL CORE ANALYSIS

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ.	VERTICAL	POR. FLD.	FLUID SATS. OIL	WATER	GR. DNS.	DESCRIPTION
1	5289-90	6.4		5.3	0.0	37.7	2.84	LS, TN FN XLN DOL CALC
2	5290-91	8.2		3.4	0.0	73.5	2.84	LS, TN FN XLN DOL CALC
3	5291-92	11		3.0	0.0	73.3	2.84	LS, TN FN XLN DOL CALC CHT
4	5292-93	2.6		3.2	0.0	68.7	2.84	LS, TN FN XLN DOL
5	5293-94	3.9		3.8	0.0	60.5	2.80	LS, TN FN XLN DOL
6	5294-95	4.2		3.5	0.0	74.3	2.82	LS, BRN FN XLN DOL SM VUGS
7	5295-96	4.1		5.0	0.0	50.0	2.83	LS, BRN FN XLN DOL SM VUGS
8	5296-97	8.1		2.3	6.0	0.0	2.83	LS, BRN FN XLN DOL SM VUGS
9	5297-98	2.4		5.8	0.0	44.8	2.83	LS, BRN FN XLN DOL SM VUGS
10	5298-99	3.1		4.9	0.0	61.2	2.84	LS, TN FN GRN DOL CALC SM VUGS
11	5299 -0	1.9		6.4	0.0	45.3	2.84	LS, TN FN GRN DOL CALC SM VUGS
12	5300 -1	1.9		6.4	0.0	45.3	2.82	LS, TN FN GRN DOL CALC SM VUGS
13	5301 -2	1.8		5.8	0.0	50.0	2.82	LS, WH FN GRN CARB INCL VUGS
14	5302 -3	1.4		5.2	0.0	50.0	2.82	LS, TN FN GRN CARB VUGS HORZ FRAC
15	5303 -4	2.0		5.3	0.0	54.7	2.82	LS, TN FN GRN CARB VUGS HORZ FRAC
16	5304 -5	2.9		4.3	0.0	58.1	2.85	LS, TN FN GRN CARB VUGS HORZ FRAC
17	5305 -6	4.1		4.1	0.0	65.8	2.85	LS, WH FN GRN CARB DOL CALC FRAC
18	5306 -7	7.9		4.1	0.0	53.6	2.84	LS, GRY FN GRN DOL CALC FRAC VUG
19	5307 -8	3.0		4.6	0.0	54.3	2.84	LS, GRY FN GRN DOL CALC FRAC VUG
20	5308 -9	102		8.7	0.0	29.9	2.80	LS, GRY FN GRN DOL CALC FRAC VUG
21	5309-10	48		4.1	0.0	58.5	2.80	LS, GRY FN GRN DOL CALC SM VUGS
22	5310-11	5.8		3.4	0.0	76.4	2.79	LS, GRY FN GRN DOL CALC SM VUGS
23	5311-12	2.9		3.6	0.0	72.2	2.80	LS, GRY FN GRN DOL CALC SM VUGS
24	5312-13	4.1		4.3	0.0	58.1	2.82	LS, GRY FN GRN DOL CALC SM VUGS
25	5313-14	2.4		4.5	0.0	55.5	2.86	LS, WH FN GRN DOL CALC ANHY VUGS

SHELL OIL COMPANY
HARVEY FEDERAL 1-10R
WILDCAT
GARFIELD COUNTY

FORMATION : KAIBAB
DRLG. FLUID: WATER BASE MUD
LOCATION : SEC. 10-T32S-1E
STATE : UTAH

DATE : 10-5-78
FILE NO. : RP-3-2880
ANALYSTS : BH
ELEVATION: 9747' KB

CONVENTIONAL CORE ANALYSIS

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ.	PERM. TO AIR (MD) VERTICAL	POR. FLD.	FLUID SATS. OIL	FLUID SATS. WATER	GR. DNS.	DESCRIPTION
26	5314-15	2.9		4.8	0.0	56.2	2.85	LS, WH FN GRN DOL ANHY PORES
27	5315-16	10		4.3	0.0	79.1	2.85	LS, WH FN GRN DOL ANHY SM VUGS
28	5316-17	4.0		4.2	0.0	73.8	2.85	LS, WH FN GRN DOL ANHY SM VUGS

SHELL OIL COMPANY
SHELL-HARVEY NO. 1-10R
WILDCAT
GARFIELD COUNTY

FORMATION : KAIBAB
DRLG. FLUID:
LOCATION : NW 1/4 SEC. 10-T32S-R1E
STATE : UTAH

DATE : 10-5-78
FILE NO. : RP-2-5701
ANALYSTS : RG:RM
ELEVATION: 9746' GL

CONVENTIONAL CORE ANALYSIS--BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ.	PERM. TO AIR (MD) VERTICAL	POR. B.L.	FLUID SATS. OIL	FLUID SATS. WATER	GR. DNS.		DESCRIPTION
35	5905 -6	0.03		1.6	3.9	70.6	2.65		SD DRK GY VFG SLTY SL/SHLY
36	5906 -7	0.04		3.1	3.7	67.2	2.76		SD DRK GY VFG SLTY SL/SHLY
37	5907 -8	0.03		1.5	0.0	80.5	2.83	VF	DOLO TN-GY VFX
38	5908 -9	0.02		1.2	0.0	77.9	2.84	VF	DOLO TN-GY VFX
39	5909-10	0.69 F		5.1	13.4	62.6	2.84	VF	DOLO TN-GY VFX
40	5910-11	*		2.2	52.8	22.6	2.72	VF	DOLO TN VFX
	5911-5912								MISSING INTERVAL
	5912-5914								DRILLED
41	5914-15	0.02		1.1	67.0	18.6	2.76		DOLO DRK GY VFX SL/SHLY
42	5915-16	0.10		3.7	40.0	34.3	2.73	VF	DOLO TN-GY VFX
43	5916-17	94		16.8	0.5	45.3	2.67	VF	SD GY FG SL/SILIC
44	5917-18	12		14.0	0.5	14.4	2.71		SD GY MED SL/SILIC
45	5918-19	21		6.8	0.0	10.5	2.67		SD GY MED V/SILIC

*UNSUITABLE FOR PERMEABILITY MEASUREMENT
F = FRACTURED PERMEABILITY PLUG
VF = VERTICAL FRACTURE

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY Shell Oil Co. FIELD Wildcat FILE RP-3-2880

WELL Harvey Federal 1-10R COUNTY Garfield DATE 10-5-78

LOCATION Sec 10, T32S, R1E STATE Utah ELEV. 9747 KB

CORE-GAMMA CORRELATION

VERTICAL SCALE: 5" = 100'

CORE-GAMMA SURFACE LOG
(PATENT APPLIED FOR)

GAMMA RAY
RADIATION INCREASE →

COREGRAPH

TOTAL WATER
PERCENT TOTAL WATER
80 60 40 20 0

PERMEABILITY
MILLIDARCYS
100 50 10 5 1

POROSITY
PERCENT
15 10 5 0

OIL SATURATION
PERCENT PORE SPACE
0 20 40 60 80

KAIBAB

5289

5300

5317

INTERPRETATION OF DATA

5289.0-5317.0 Feet - Water productive.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

CL-511-1

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company Shell Oil Co. Formation Kaibab File RP-3-2880
Well Harvey Federal 1-10R Core Type Dia Conv Date Report 10/5/78
Field Wildcat Drilling Fluid Water Base Mud Analysts Hollis
County Garfield State Utah Elev. 9747 KB Location Sec 10, T32S, R1E

Lithological Abbreviations

SAND-SD, SHALE-SH, LIME-LM; DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP; ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS; SANDY-SDY, SHALY-SHY, LIMY-LMY; FINE-FN, MEDIUM-MED, COARSE-CSE; CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL; BROWN-BRN, GRAY-GY, VUGGY-VGY; FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY; SLIGHTLY-SL/, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	RESIDUAL SATURATION PER CENT PORE TOTAL WATER	GRN DNS	SAMPLE DESCRIPTION AND REMARKS
1	5290	6.4	5.3	0.0	37.7	2.84	LS, tan fn xln dol/calcite
2	5291	8.2	3.4	0.0	73.5	2.84	LS, tan fn xln dol/calcite
3	5292	11	3.0	0.0	73.3	2.84	LS, tan fn xln dol/calcite/cht
4	5293	2.6	3.2	0.0	68.7	2.84	LS, tan fn xln dol
5	5294	3.9	3.8	0.0	60.5	2.80	LS, tan fn xln dol
6	5295	4.2	3.5	0.0	74.3	2.82	LS, brn fn xln dol small vugs
7	5296	4.1	5.0	0.0	50.0	2.83	LS, brn fn xln dol small vugs
8	5297	8.1	5.0	0.0	46.0	2.83	LS, brn fn xln dol/cal small vugs
9	5298	2.3	6.0	0.0	43.3	2.83	LS, brn fn xln dol/cal small vugs
10	5299	2.4	5.8	0.0	44.8	2.84	LS, brn fn xln dol/cal small vugs
11	5300	3.1	4.9	0.0	61.2	2.84	LS, tan fn grn dol/cal small vugs
12	5301	1.9	6.4	0.0	45.3	2.82	LS, tan fn grn dol/cal small vugs
13	5302	1.8	5.8	0.0	50.0	2.82	LS, wht fn grn carb incl vugs
14	5303	1.4	5.2	0.0	50.0	2.82	LS, tan fn grn carb vugs horiz frac
15	5304	2.0	5.3	0.0	54.7	2.82	LS, tan fn grn carb vugs horiz frac
16	5305	2.9	4.3	0.0	58.1	2.85	LS, tan fn grn carb vugs horiz frac
17	5306	4.1	4.1	0.0	65.8	2.85	LS, wht fn grn carb/dol/calc frac
18	5307	7.9	4.1	0.0	53.6	2.84	LS, gry fn grn dol /calc frac vug
19	5308	3.0	4.6	0.0	54.3	2.84	LS, gry fn grn dol/calc frac vug
20	5309	102	8.7	0.0	29.9	2.80	LS, gry fn grn dol/calc frac vug
21	5310	48	4.1	0.0	58.5	2.80	LS, gry fn grn dol/calc small vugs
22	5311	5.8	3.4	0.0	76.4	2.71	LS, gry fn grn dol/calc small vugs
23	5312	2.9	3.6	0.0	72.2	2.80	LS, gry fn grn dol/calc small vugs
24	5313	4.1	4.3	0.0	58.1	2.82	LS, gry fn grn dol/calc small vugs
25	5314	2.4	4.5	0.0	55.5	2.86	LS, wht fn grn dol/calc/anhy vugs
26	5315	2.9	4.8	0.0	56.2	2.85	LS, wht fn grn dol/anhy pores
27	5316	10	4.3	0.0	79.1	2.85	LS, wht fn grn dol/anhy small vugs
28	5317	4.0	4.2	0.0	73.8	2.85	LS, wht fn grn dol/anhy small vugs

CORE ANALYSIS RESULTS FOR

SHELL OIL COMPANY

SHELL-HARVEY NO. 1-10R

WILDCAT

GARFIELD COUNTY, UTAH

SHELL OIL COMPANY
SHELL-HARVEY NO. 1-10R
WILDCAT
GARFIELD COUNTY

FORMATION : KAIBAB
DRLG. FLUID:
LOCATION : NW 1/4 SEC. 10-T32S-R1E
STATE : UTAH

DATE : 10-5-78
FILE NO. : RP-2-5701
ANALYSTS : RG:RM
ELEVATION: 9746' GL

CONVENTIONAL CORE ANALYSIS--BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ.	PERM. TO AIR (MD) VERTICAL	POR. B.L.	FLUID SATS. OIL	FLUID SATS. WATER	GR. DNS.		DESCRIPTION
1	5322-23	79		18.2	1.1	77.9	2.86		DOLO TN SUC PP VUGS PYR
2	5323-24	11		14.9	1.1	76.5	2.86		DOLO TN SUC PP VUGS PYR
3	5324-25	133		19.2	0.9	74.6	2.85		DOLO TN SUC PP VUGS PYR
4	5325-26	2.9		10.8	0.0	63.2	2.83		DOLO TN SUC PP VUGS PYR
5	5326-27	4.7		11.6	1.4	69.8	2.83	VF	DOLO TN SUC PP VUGS PYR
6	5327-28	58		16.6	1.0	60.0	2.83		DOLO TN SUC PP VUGS
7	5328-29	76		17.8	0.8	75.9	2.79		DOLO TN SUC PP VUGS PYR
8	5329-30	40		16.9	0.8	73.5	2.83	VF	DOLO TN SUC PP VUGS PYR
9	5330-31	45		17.3	0.8	77.9	2.84		DOLO TN SUC PP VUGS PYR
10	5331-32	39		15.6	1.0	78.9	2.83		DOLO TN SUC PP VUGS PYR
11	5332-33	69		18.8	1.0	72.5	2.85		DOLO TN SUC PP VUGS
12	5333-34	46		18.7	1.2	78.0	2.85		DOLO TN SUC PP VUGS PYR
13	5334-35	113		20.2	0.9	70.1	2.85		DOLO TN SUC PP VUGS PYR
14	5335-36	91		20.3	0.9	73.9	2.85		DOLO TN SUC PP VUGS PYR
15	5336-37	58		17.0	0.8	72.3	2.83		DOLO TN SUC PP VUGS PYR
16	5337-38	102		21.5	0.8	77.9	2.86		DOLO TN SUC PP VUGS
17	5338-39	95		21.9	0.9	81.6	2.85		DOLO TN SUC PP VUGS
18	5339-40	21		15.8	0.8	83.3	2.84	VF	DOLO TN SUC PP VUGS
	5340-5346								MISSING INTERVAL
19	5346-47	157		20.9	0.8	86.4	2.85		DOLO TN SUC PP VUGS
20	5347-48	225		21.6	0.9	88.2	2.83		DOLO TN SUC PP VUGS
21	5348-49	30		17.2	1.0	86.9	2.85		DOLO TN SUC PP VUGS
22	5349-50	59		16.6	0.9	85.6	2.83		DOLO TN SUC PP VUGS
23	5350-51	84		18.3	0.8	86.3	2.84		DOLO TN SUC PP VUGS
24	5351-52	89		17.0	1.2	79.4	2.84		DOLO TN SUC PP VUGS

VF = VERTICAL FRACTURE

SHELL OIL COMPANY
SHELL-HARVEY NO. 1-10R
WILDCAT
GARFIELD COUNTY

FORMATION : KAIBAB
DRLG. FLUID:
LOCATION : NW 1/4 SEC. 10-T32S-R1E
STATE : UTAH

DATE : 10-5-78
FILE NO. : RP-2-5701
ANALYSTS : RG:RM
ELEVATION: 9746' GL

CONVENTIONAL CORE ANALYSIS--BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ.	PERM. TO AIR (MD) VERTICAL	POR. B.L.	FLUID SATS. OIL	FLUID SATS. WATER	GR. DNS.		DESCRIPTION
25	5352-53	18		14.5	1.0	81.3	2.83		DOLO TN SUC PP VUGS
26	5353-54	79		18.3	0.9	85.0	2.84		DOLO TN SUC PP VUGS
27	5354-55	58		16.6	1.0	81.6	2.85		DOLO TN SUC PP VUGS
28	5355-56	58		16.5	0.9	80.2	2.82		DOLO TN SUC PP VUGS CALC INCL
29	5356-57	30		15.7	0.8	89.3	2.84		DOLO TN SUC PP VUGS
30	5357-58	41		17.8	1.0	79.2	2.85		DOLO TN SUC PP VUGS
31	5358-59	206		19.3	0.9	72.1	2.84		DOLO TN SUC PP VUGS
32	5359-60	143		18.1	0.8	64.1	2.84		DOLO TN SUC PP VUGS
33	5360-61	66		16.5	1.0	79.7	2.84	VF	DOLO TN SUC PP VUGS
34	5361-62	423		20.9	3.8	87.5	2.85	VF	DOLO TN SUC PP VUGS

VF = VERTICAL FRACTURE

SHELL OIL COMPANY
SHELL-HARVEY NO. 1-10R
WILDCAT
GARFIELD COUNTY

FORMATION : KAIBAB
DRLG. FLUID:
LOCATION : NW 1/4 SEC. 10-T32S-R1E
STATE : UTAH

DATE : 10-5-78
FILE NO. : RP-2-5701
ANALYSTS : RG:RM
ELEVATION: 9746' GL

CONVENTIONAL CORE ANALYSIS--BOYLE'S LAW HELIUM POROSITY

SAMP. NO.	DEPTH	PERM. TO AIR (MD) HORZ.	PERM. TO AIR (MD) VERTICAL	POR. B.L.	FLUID SATS. OIL	FLUID SATS. WATER	GR. DNS.		DESCRIPTION
35	5905 -6	0.03		1.6	3.9	70.6	2.65		SD DRK GY VFG SLTY SL/SHLY
36	5906 -7	0.04		3.1	3.7	67.2	2.76		SD DRK GY VFG SLTY SL/SHLY
37	5907 -8	0.03		1.5	0.0	80.5	2.83	VF	DOLO TN-GY VFX
38	5908 -9	0.02		1.2	0.0	77.9	2.84	VF	DOLO TN-GY VFX
39	5909-10	0.69 F		5.1	13.4	62.6	2.84	VF	DOLO TN-GY VFX
40	5910-11	*		2.2	52.8	22.6	2.72	VF	DOLO TN VFX
	5911-5912								MISSING INTERVAL
	5912-5914								DRILLED
41	5914-15	0.02		1.1	67.0	18.6	2.76		DOLO DRK GY VFX SL/SHLY
42	5915-16	0.10		3.7	40.0	34.3	2.73	VF	DOLO TN-GY VFX
43	5916-17	94		16.8	0.5	45.3	2.67	VF	SD GY FG SL/SILIC
44	5917-18	12		14.0	0.5	14.4	2.71		SD GY MED SL/SILIC
45	5918-19	21		6.8	0.0	10.5	2.67		SD GY MED V/SILIC

*UNSUITABLE FOR PERMEABILITY MEASUREMENT
F = FRACTURED PERMEABILITY PLUG
VF = VERTICAL FRACTURE

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY SHELL OIL COMPANY FIELD WILDCAT FILE RP-2-5701

WELL SHELL-HARVEY NO. 1-10R COUNTY GARFIELD DATE 10-5-78

LOCATION NW ¼ SEC. 10-T32S-R1E STATE UTAH ELEV. 9746' GL

CORE-GAMMA CORRELATION

VERTICAL SCALE: 5" = 100'

CORE-GAMMA SURFACE LOG
(PATENT APPLIED FOR)

GAMMA RAY
RADIATION INCREASE →

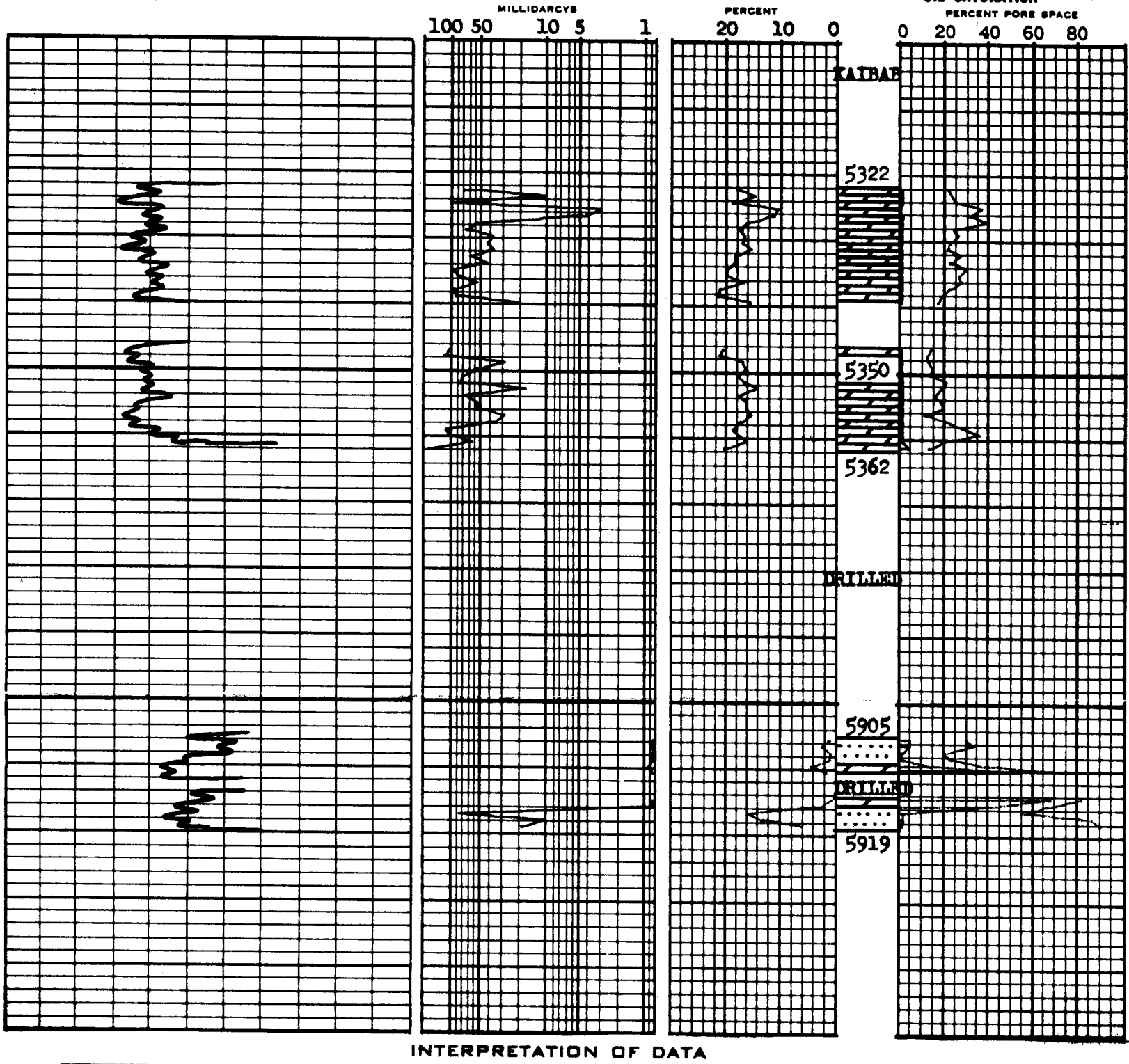
COREGRAPH

TOTAL WATER
PERCENT TOTAL WATER
80 60 40 20 0

PERMEABILITY
MILLIDARCYS
100 50 10 5 1

POROSITY
PERCENT
20 10 0

OIL SATURATION
PERCENT PORE SPACE
0 20 40 60 80



INTERPRETATION OF DATA

5322.0-5340.0 Feet - Water productive.
5346.0-5362.0 Feet - Water productive.
5905.0-5911.0 Feet - Non productive.
5914.0-5919.0 Feet - Water productive where permeable.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

JOHNSTON

PRESSURE LOG*

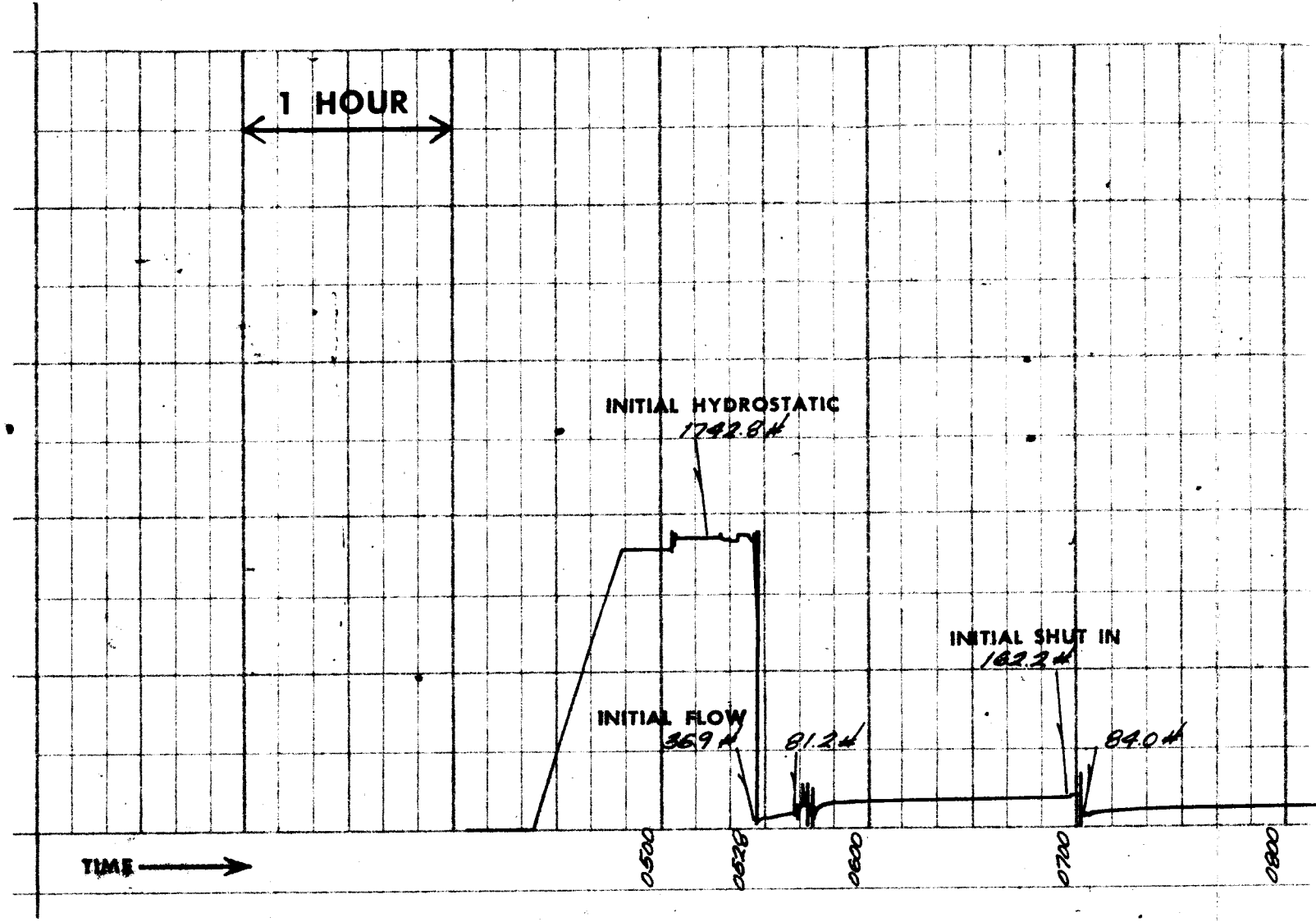
Field Report No. 22698 D

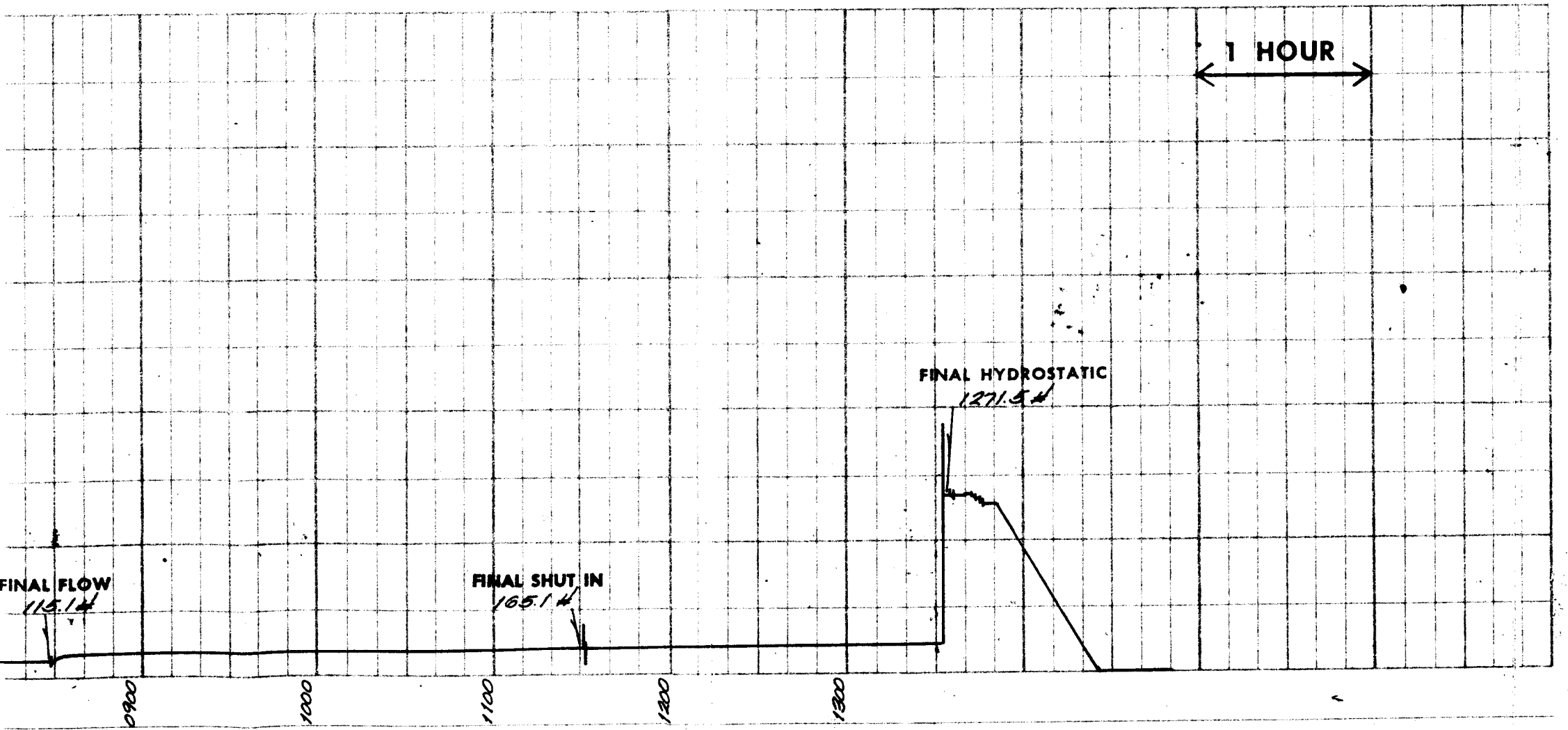
Instrument: Number T-869

Capacity 4700 p.s.i.

Depth 4999 ft.

*a continuous tracing of the original chart




1 HOUR
FINAL HYDROSTATIC
1271.5#
FINAL FLOW
115.1#
FINAL SHUT IN
165.1#
0900
1000
1100
1200
1300

Form J-228a

JOHNSTON

PRESSURE LOG*

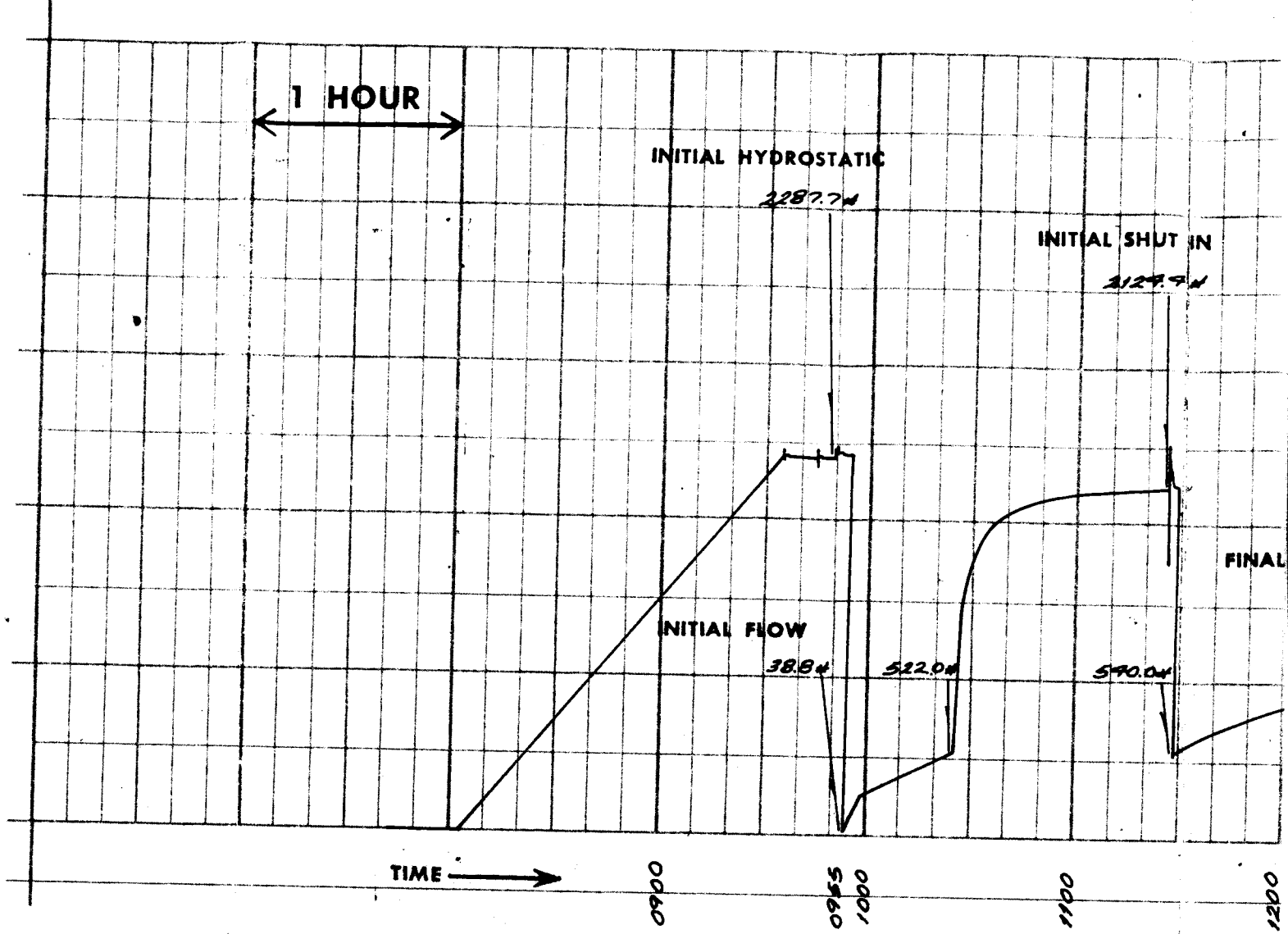
Field Report No. 09779 D

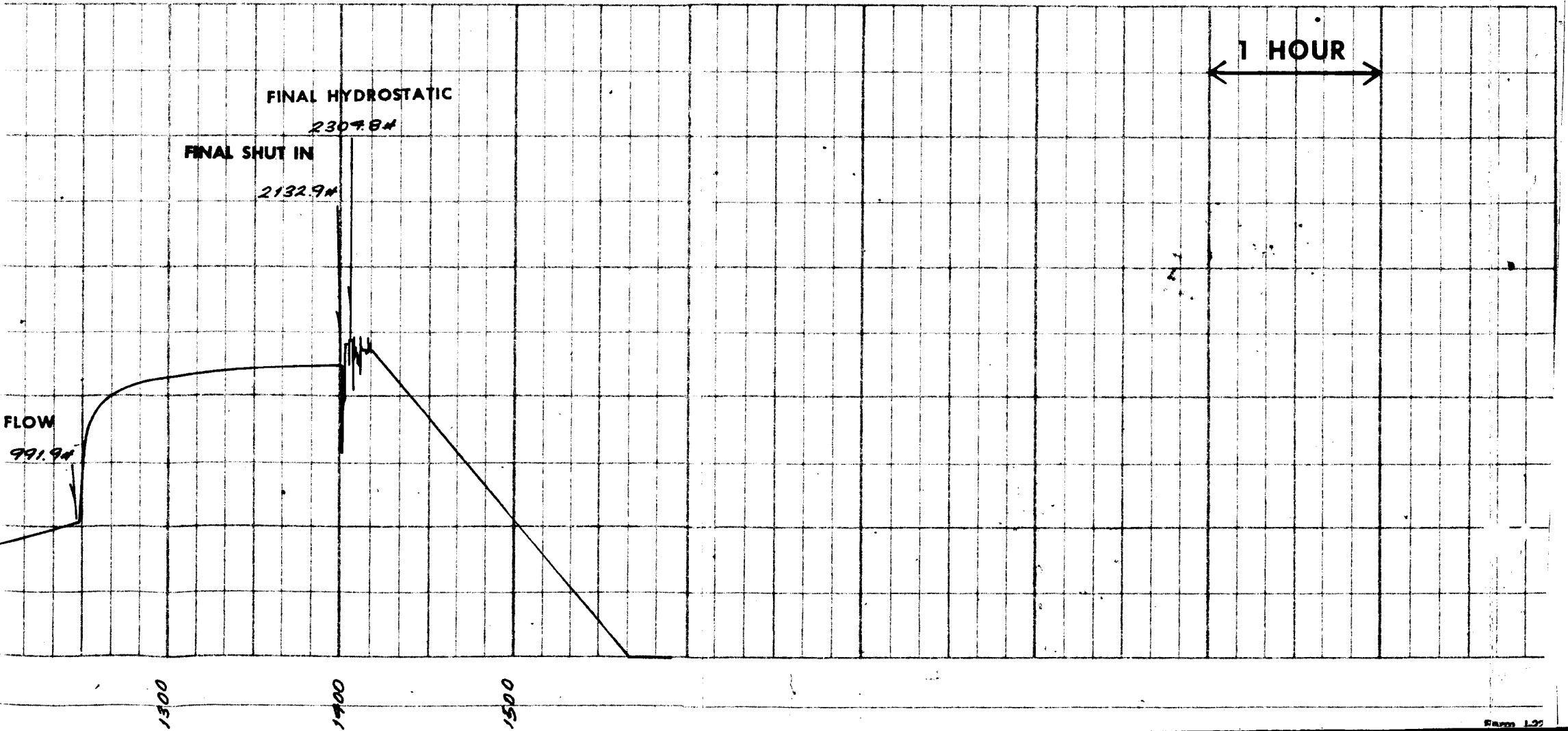
Instrument:
Number J-061

Capacity 4700 p.s.i.

Depth 4874 ft.

*a continuous tracing of the original chart




1 HOUR
FINAL HYDROSTATIC
2307.8#
FINAL SHUT IN
2132.9#
FLOW
991.9#
1300
1400
1500

Form 1-22

UTAH

ZINC AREA

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

"FR" 40/109/1/40. Drlg on bolders. Located 1089' FWL & 1289' FNL, NW/4 NW/4 Section 10-T32S-R1E, Garfield County, Utah. Shell's Working Interest: 100%. Spudded 11:00 pm 6/28/78. Drlg on bolders; unable to pick up DC's yet.
Mud: Air

JUN 29 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

53/109/2/13. Working on rotating head. Drld on bolders; hole fell in on top of bit. Bit stuck; tried to move pipe, but could not. Ran 2 jts 2-3/8" tbg along side & used air to free bit. Changed BHA & picked up 28" hole opener & bit Working on rotating head.
Mud: Air

JUN 30 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

7/1: 53/109/3/0. Opening hole to 28". Worked on rotating head to accept 28" hole opener. Modified air manifold; changed out BHA & picked up rubber sleeve stabilizer. Working on opening hole to 28".
Mud: Air
7/2: 58/109/4/5. Drlg on 28" hole. Working on opening hole to 28". Drlg through bolders.
Mud: Air
7/3: 63/109/5/5. RIH w/17-1/2" bit. Drlg 28" hole to 63'. POOH, changed BHA & RIH.
Mud: Air

JUL 03 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800 Kaibab/Toroweap/
Redwall Test
EL 9746' GR

7/4: 100/109/6/37. Drlg. Changed bit & picked up DC; could not get to btm, had to LD DC, had 15' of fill.
7/5: No report.

JUL 5 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

7/5: 195/109/7/95. Drlg. Dev: 1/2 deg @ 139'.
6/6: 310/109/8/115. Drlg. Drlg on bolders. Lost circ @ 260' for 15 mins, drop'd approx 8'.
Mud: Air

JUL 6 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

426/109/9/116. Drlg.
Mud: Air

JUL 7 1978

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 2/13 Flw'd 5 hrs wide open w/13# FTP @ rate of 1 MMCFG/day & FL @ 3510. SITP 50# while run'g FL check. Reopened after 20 mins & flw'd well wide open. Prep to run BHP static w/bomb hanging @ 4200'.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

FEB 14 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 2/14 Ran 1-1/4" bomb w/3 hr clock w/2500 lb press element. Made several grad stops on way dn; could detect no fluid or FL in hole. Recorded 28-hr BHP & POOH. Pmp'd 30 bbls clean wtr dn tbg. Set Otis plug @ 3250'. Rig released 3:00 p.m. Well SI; will abandon in summer.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'
(Report discontinued until further activity.)

FEB 15 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 2/8 Load csg w/53 bbls 150 deg wtr. OWP ran GR/CCL/CBL from 4451' to 3300'. Cmt bond showed 90% bond below 4300' (spotted), 50% bond 4300-4110, 90% 4110-3750, 50% 3750-3610, 80% 3610-3500 & 0% 3500-3300. GR correlated w/open hole log. Prep to perf.

FEB 9 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

FEB 12 1979

TD 8728. PB 7920. 2/9 Perf'd Shinarump zone from 4110-4210 & from 4230-4290 (160'/640 holes) using 4" HSC OWP csg gun w/23 grm chrgs as folls: (Static FL 3250')
Run #1 - 4269-4290 (20'/80 holes) FL 3250' w/0 psi.
Run #2 - 4250-4271 (20'/80 holes) FL 2970' & 0 psi.
Run #3 - 4230-4251 (20'/80 holes) FL 2700' & 0 psi.
Run #4 - Misfire - rehead rope socket.
Run #5 - Misfire - change collar locator.
Run #6 - 4182½-4210' (25'/100 holes) FL 2800' & 0 psi.
Run #7 - 4158-4187½' (25'/100 holes) FL 2800' & 0 psi.
Run #8 - 4134-4159½ (25'/100 holes) FL 2875 & 0 psi.
Run #9 - 4110-4135½ (25'/100 holes) No FL detected & 0 ps
PU Bkr 7-5/8" full bore pkr & ran to 3306; set pkr.
2/10 BJ acdz'd Shinarump perfs 4110-4290 w/6500 gals 15%. Formation broke dn after pmp'g 23 bbls acid @ 2650 lbs.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

Max TP 3050; Min 2450; avg 2750. Max rate 14.5, min 10.0, avg 12.0. Max nitrogen rate 26.1 B/M, min 18.0, avg 21.1. ISIP 1400#; 5 min 550, 10 min 420, 15 min, 390 & 50 min 80. Used 400# BAF in 500 gals gelled HCl. Flushed w/48 bbls fresh wtr. 9-5/8" annulus developed strong blow w/10 bbls flush left to pmp. Pmp'd 50 bbls clean frh wtr dn 9-5/8" csg. Flw'd to pit thru 1" chk. ISIP 80 psi for 50 min. Bled to 10 lbs in 15 min. Reduced chk to 32/64" & continued blw'g. FTP rose to 14 lbs within 15 mins. Installed orifice well tester & after 2 hrs rate was 350 MCFD gas - will not burn; same @ 3 hrs & 4 hrs. FTP 14 lbs; no fluid prod. 2/11 Flw'g well to pit on 32/64" chk. Rates as folls: In 8½ hrs flw'd 360 MCFD; 4 hrs peaks of 990 MCFD & lows of 470 MCFD. In 2 hrs flw'd 415 MCFD; 9½ hrs varying from 360 MCFD to 475 MCFD; 30 min jumped to 1290 MCFD; 30 min 1312 MCFD; 30 min fell to 750 MCFD. From 9 PM 2/11 to 1 AM 2/12 rate fluctuated from 840-1057 MCFD; now steady @ 475 MCFD; will not burn - no fluid. FTP from 30 lbs-50 lbs.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 2/12 After flw'g well 42 hrs on 32/64" chk, FL @ 3880'. Flw'd well on 1" chk for 2 hrs w/rate of 750 MCFD Gas & FTP 16#. Removed seat in 1" chk & flw'd well wide open to pit w/FTP fluctuating from 6-8#. After flw'g well 47 hrs, FL @ 3760; 49 hrs FL @ 3670' w/no press on 9-5/8" csg or parasite string. Gas flw'g to pit will not burn; has strong acid odor. Flw'd well to pit wide open overnight.

FEB 13 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. Prep to cut 5-1/2" csg @ 4600'. 2/1 SD for repairs.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

FEB 2 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 2/2 Cut off 5-1/2" csg @ 4600' & POOH. Did not indicate csg had been cut. Reran 2nd cut @ 4605'; csg did not cut. 2/3 Ran DR plug & set in pkr @ 5460. Tested plug to 2500#; plug holding. 5-1/2" csg had not been cut. PU Bowen internal csg cutter. RIH to 4610 & made cut. Lost circ; 5½" on vac. 2/4 POOH w/csg cutter. Latched 5½ Bowen spear into 5½" csg below 5½ csg slips. Pulled 100,000# to free csg slips from csg hd. Prep to pull 5½" csg.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

FEB 5 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 2/5 Pulled 5½" csg (4610.45'). Made retrieving head to retrieve DR plug. Ran tbg in hole. SDON.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

FEB 6 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 2/6 Circ'd sd to DR plug. Released DR plug & POOH. Ran lead seal adapter to 4610' & set around 5-1/2" csg stub. POOH. SD.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

FEB 7 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 2/7 Set 7-5/8" BP w/ball catcher @ 4456'. POOH & LD retrieving hd. Installed 6" 5000 lb BOP. Prep to perf. SDON.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

FEB 8 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN 29 1979

TD 8728. PB 7920. 1/26 Ran BHP to 5750', 58' below btm perf; stabilized @ 263 psi & 143.9 deg F. Well flw'd on 32/64" chk for 2 hrs @ rate of 736 MCF Gas/day w/138 FTP. Well flw'd on 45/64" chk for 2 hrs @ rate of 790 MCF Gas/day, 259.87 psi, 143.9 deg F & 135 FTP. Well flw'd on 55/64" chk for 1 hr @ rate of 790 MCF Gas/day, 259.77 psi, 143.9 deg F & 133 FTP. Flw'd on 64/64" chk for 1 hr @ rate of 790 MCF Gas/day, 143.9 deg F & 132 FTP. Closed well for 2 hr press bldup. Press rose to 261.49 psi within 10 min, to 262.73 within 1st hr & stable for 2nd hr. Flw'd wide open across 1-3/8" orifice plate for 2½ hrs. 1st hr rate 1271 MCF Gas/day, 259.72 psi, 143.9 deg F & 79 FTP. Stabilized in 2nd hr @ 1172 MCF Gas/day, 258.69 psi, 144 deg F & 70 FTP. Closed well in for short press bldup. Stabilized @ 262.40 psi & 143.9 deg F within 1 hr. Pulled tools. 3/16" WL parted. 1/27 SI. 1/28 Ran 1-3/4" OD O'Bannon overshot thru Bkr seal assembly @ 5460. Tag'd btm @ 6528; could not latch onto fish. POOH. Reran same tools & added knuckle jt to fishing string. Made several attempts to latch onto fish--no recovery. POOH. SI. 1/29 Fishing for survey instrument @ 6528.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/29 Fish'g for Go log'g tools. RIH w/1-3/4" overshot to 6528 & fished. POOH w/no rec. Ran sd pmp w/same OD tools w/o success. Reran O'Bannon overshot to 6546 & POOH w/no rec. SD for night.

JAN 30 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/30 83-hr SIP 162. Flw'd well wide open for 20 min to CO. Flw'd thru 1-3/4" orifice plate for 30 min @ flw rate of 1172 MCF Gas/day & 69 FTP. SI 30 min. Ran temp gradient survey; waited 30 min & ran 2nd survey; waited 30 min & ran 3rd survey. All surveys run from 5488'-5694'. SI.

JAN 31 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. Prep to cut 5-1/2" csg @ 4600'. 1/31 Ran Bowen csg cutter.

FEB 1 1979

Shell-Harvey-Federal 1-[illegible]
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/22 AT p[illegible]'s 5514-5692 as per prog. Max TP 2500, min 1500, avg 1800. Max rate 13.6 BPM, min 9.4 BPM, avg 10 BPM. ISIP 600#, 5 min 210, 10 min 200, 15 min 200. Rec'd 155 bbls acid & 33 bbls flush.

JAN 23 1979

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/23 Back flw'd well to pit 4 hrs. Well clean - CO2; will not burn. 15 min SITP 175#. Flw'd well 10:00 a.m. 1/23/79 - 6:00 a.m. 1/24/79. In 20 hrs stabilized flw w/150# FTP thru a 1" chk. Flw rate 715,000 cu ft/day w/150# FTP on a 1" chk; no fluid & gas will not burn.

JAN 24 1979

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. SI BHPS. 1/24 Flw'd on a 1" chk 6:00 a.m.-8:00 p.m. Final flw rate 731,423 cu ft gas/day w/separator press of 138# & temp 150 deg.

JAN 25 1979

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/25 RU Go to run flw'g gradients & 48 hr bldup.

JAN 26 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 1/16 SD.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN 17 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 8728. 1/17 SD due to bad weather.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN 18 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 1/18 Made 6 swb runs & swb FL dn to 2500'. SI.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN 19 1979

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 1/19 Swb'd fluid level dn to 5500'. POOH w/tbg & mill. RU OWP. SION. 1/20 Perf'd Toroweap zone 5514-5692' (136' - 544 holes) w/OWP 4" csg guns (1/2" OD holes & 23 grm chrgs) as folls: Run #1 5672-5692 - 80 holes, FL 4800 & 0 psi. Run #2 5660-5634 - 26' - 104 holes w/FL 4750 & 0 psi. Run #3 5610-5634 (gun misfir w/FL 4750 & 0 psi (dry run). Run #4 5574-5590 (16' - 64 holes) w/FL 4750 & 0 psi. Run #5 - 5564-5538 (26' - 104 holes) w/FL 4950 & 0 psi. Run #6 - 5514-5538 (24' - 96 holes) w/FL 4500' & 25 psi. Run #7 - 5610-5624 (14'-56 holes) w/FL 4300' & 50 psi. Run #8 - 5624-5634 (10' - 40 holes) w/FL 3550' & 75 psi. Note: FL rose on Run #6 @ 5514-5538. Press incr'd 3 P/M to 6 P/M to 100 psi. SION.
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN 22 1979

ZINC AREA
Shell-Harvey-Federal 1-10R (Cont)
1/21 OWP set 5½" Bkr Model "D" pkr w/flapper @ 5460. Ran 5' prod tube, 2 seals, latch-in assembly, +45 SN, 173 jts 2-7/8" tbg & 3 subs. Stung into pkr @ 5460 & tbg started blw'g. Unlatched from pkr & spaced out w/ 5000 lbs tension w/cameron 2" BPV. Installed 5000# tree & bled trapped gas off 5½", ok. RU B-J & Nowsco. SION.

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/9 TP 0. 1st swb run FL 5400. Made 22 swb runs w/FL from 5400-6350. Swb'd off SN @ 6908. Rec'd 91 bbls fluid (load & acid wtr) for total of 245 bbls. Rec'd 67 bbls over load (100% wtr). SI overnight.

JAN 10 1979

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. Milling on CICR @ 7501'. 1/10 TP & CP 0 psi. 1st & only swb run FL 5400'; SF 6908. Rec'd 8 bbls for total of 253 bbls - 75 bbls over load. Removed tree & installed BOP. Pulled pkr & RBP. PU 4-3/4" OD mill & ran CICR @ 7500'. Milled 1 hr from 7500'-7501'.

JAN 11 1979

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/11 Tag'd CICR @ 7501' & finished milling CICR @ 7501'. Pushed CICR to 8409, below btm of 5-1/2" csg. Pmp'd 200 BW dn tbg into open hole @ 0 press @ 7 bbls/min. Set Baker 5-1/2" CICR @ 7330'.

JAN 12 1979

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN 15 1979

TD 8728. PB 7920. Prep to pmp cmt. 1/12 Pmp 100 bbls fresh wtr dn tbg. Running mill. 1/13 Pmp'd 75 bbls fresh wtr dn tbg, press 1000 lbs. Pmp'd 224 sx RFC cmt cont'g .2% retarder & .75% D-31 through retainer @ 7550 w/0 psi. Displ'd w/44 bbls wtr. Tbg on vac. Pulled 1 jt tbg w/stinger @ 7300'. Pmp'd 2nd stage 150 sx Class "G" cmt cont'g .6% RRT, .8% R-4 & 1/4 lb flocele. Displ'd w/34 bbls wtr. 1/14 Ran 4-3/4" mill to top of cmt @ 6836 & pushed to 6846'. Pulled to 5900'. Loaded hole w/warm wtr. Press tested cmt top in 5-1/2" csg to 3000 lbs 45 min, ok. Swb FL dn 1000'. Suspended operations until noon Wednesday.

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/15 SD.

JAN 16 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/3 SIP 0 psi. RIH w/Bkr 5-1/2" cmt retainer & set @ 7500'. Perf'd Elephant Canyon using a 4" csg gun w/23 grm chrgs @ 4 shots/ft. 1st run perf'd 7266-7247- (80 holes) w/0 psi & FL 5200'. 2nd run perf'd 7245-7228 (72 holes) w/0 psi & FL 5170'. 3rd run perf'd 7227-7214 (56 holes) w/0 psi & FL 5150'. 4th run perf'd 7213-7200 (56 holes) w/0 psi & FL 5150'. 5th run perf'd 7031-7020 (44 holes) w/0 psi & FL 5130'. Total 308 holes. RIH w/csg scraper. SION.

JAN -4 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/4 SIP 0. POOH w/scraper. Set 5-1/2 Bkr Mdl F BP @ 7300 & 5-1/2 Bkr ret pkr @ 6880 w/12,000# set down. 1st swb run FL 4120; swb'd 5200'. 2nd run FL 5200 & SF 5800. 3rd run FL 5800. Swb'd 10 BW. Made 3 more runs @ 1 run/hr. 4th run - 4200, 5th run - 5200 & 6th run - 4500; SF 5800'. Returns were wtr. Rec'd total of approx 20 bbls this day. SI well for night. Prep to repair sdline.

JAN 05 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN 08 1979

TD 8728. PB 7920. 1/5 1st swb run FL 5200' & SF 6000'; plain wtr, no oil (4 bbls). Made 2 more runs. 1st run FL 5200' & 2nd run FL 5800'. Total rec'd 15 bbls. 1/6 Swb'g-FL 1st run 5200'. Made 6 runs & rec'd 25 bbls for total of 60 bbls. No oil or gas. Reset pkr @ 7100'. Acdz 7200-7266 w/76 bbls 15% HCl. FL @ 6000'. Max TP 3000 psi @ 4 bbls per min. Displaced w/43 bbls 2% KCl wtr; tbg on vac. Reset BP @ 7100' & pkr @ 7000'. Tested BP, ok. Reset pkr @ 6908'. Acdz top perfs 7031-7031 w/ 800 gals 15% HCl. Max TP 2000 psi @ 5 bbls/min. Flushed w/41 bbls 2% KCl wtr; tbg on vac. Set BP @ 7000'. RU to swb. FL 1st run 4500'-SF 5500'. Rec'd 5 bbls KCl wtr. Load 178 bbls. 1/7 Sli blw on csg; would not burn. Started swb'g-1st run FL @ 5000'. Made 18 runs & FL avg'd 5000'-5800' each run. SF 6908'. Rec'd 57 bbls load; 121 bbls to rec. No signs of oil.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 1/8 CP & TP 0. Swb'g - 1st run FL @ 5400'. Made 18 runs w/FL @ 5400-6600; SF 6908. Rec'd 97 bbls load. Lack 24 bbls to rec. Rec'd acid gas, will not burn. No indication of oil.

JAN 09 1979

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 27 1978

TD 8728. PB 7920. 12/22 Well open to pit overnight & died. 1st swb run FL @ 4350' SF 5250'. Made 20 swb runs w/FL avg 5100' & SF 7300'. Well on vac. Rec 175 bbls, total 617 bbls. SI overnight. 12/23 0 TP. Worked swb to 6100' & unable to go deeper. RIH w/sinker bar to 7900'. Made 18 swb runs & FL @ 5400'; SF 7900'. Swb'd 200 bbls; total 817 bbls. Returns are milky colored wtr. Tried burning w/out success. SI for Christmas. 12/26 60 hr SIP 0 psi. Went to 8711'. RU to swb. First run FL 5200', SF 7500'. Made 8 more runs FL @ 5300' & SF 7900'. 100 bbls swb'd; total 917 bbls. Returns are milky wtr. Salinity last run was 30,000 ppm.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 28 1978

TD 8728. PB 7920. TP 0 psi. First run FL @ 5200' & SF 7500'. Made 24 swb runs. FL @ 5400' & SF 7900. Swb'd total of 1,142. Returns milky colored wtr; salinity 2200 ppm & some gas in returns. Tried burning gas without success, probably N2.

Shell-Harvey Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 29 1978

TD 8728. PB 7920. 12 hrs SIP 0 psi. FL @ 5200' & SF 7500'. Made 24 swb runs w/FL @ 5400 & SF 7900'. Swb'd total of 1357 bbls w/returns still milky colored wtr. Salinity on 1st run 17,500 ppm. Tried burning without success.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN - 2 1979

TD 8728. PB 7920. 12/29 12 hr SIP 0 psi. Cont'd to swb. First run FL @ 5400', SF 7900'. Made 20 swb runs. FL @ 5400' & SF 7900'. Swb'd a total of 1557 bbls. Total load was 1543 bbls. 12/30 12 hr SIP 0 psi. First run FL 5300' & SF 7900'. Made 19 swb runs. FL @ 5400' & SF 7900'. Swb'd total of 1763 bbls; 220 bbls over load. On 21st run hit something @ 7100'. Removed WH to see if Pkr set. Packing rubbers might not be packed off, causing the vacuum on the backside.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

JAN - 3 1979

TD 8728. PB 7920. Prep to perf Elephant Canyon. 1/2 0 psi. Made one swb run, FL @ 5200' & SF 6000', returns were wtr.

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 12/14-18 Well SI.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 18 1978

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. Prep to acdz. 12/18 RIH. FL @5250'. Made 5 swb runs. First two runs returns were black wtr then clear wtr.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 19 1978

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 12/19 Prep to AT.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 20 1978

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 12/20 Tested csg-tbg annulus to 2000 psi. Proceeded w/treatment as per worksheet. Inj'd a total of 61,900 gals 15% acid & 900,000 cu ft of N2; total load fluid of 1543 bbls. Max press 7000 psi & avg 4400 psi. Max rate 20 BPM & avg 16. ISIP 2250 psi, 5 min 1150, 10 min 1050 & 15 min 1000. Flw'd wtr & N2; would not burn. After 300-bbl recovery in 5 hrs, well stabilized at rate of 1/3 BPM; flw'd wtr & N2. Well died after flw'g 380 bbls fluid. Will attempt to swb.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 21 1978

Shell-Harvey-Federal 1-10R TD 8728. PB 7920. 12/21 Well open to pit overnight & died @ 6:15 a.m. Made 11 swb runs w/est rec of 80 bbls. Total load 1543 bbls w/total rec to date of 460 bbls. Had lots of N2 flugs in returns. Left well open to pit.
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 22 1978

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 12/11 Pulled catcher. Ran Bkr 5-1/2" full bore Pkr w/unloading sub, Model R seating nipple & Model Z-2 alum plug. Set Pkr @ 5700'. Reset Pkr @ 7969'.

DEC 12 1978

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16' csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 13 1978

TD 8728. PB 7920. 12/12 Drop'd 10 gals 15% HCl acid. RIH w/swb. Tag'd @ 7965; no fluid entry. POOH. RIH w/3/4" rod on sandline; tag'd @ 7965, plug was not disolved by acid. Knocked plug out; no blow on tbg. Swb'd as folls: 1st run FL 5700', SF 6400 rec'd foamy wtr. 2nd run FL 6100', SF 6600' rec'd muddy foamy wtr. 3rd run FL 6150', SF 7350 & started to rec muddy oily type particles which floated in wtr (particles are soft). 4th run FL 6200, SF 7500; 5th run FL 6600, SF 7800; 6th run FL 6600, SF 7800; 7th run FL 6150, SF 7350; 8th run FL 6250, SF 7450; 9th run FL 6600, SF 7800; 10th run FL 6750, SF 7950; 11th run FL 6500, SF 7700; 12th run FL 6600, SF 7800. (Note: Runs 4-12's rec same as Run #3) Total fluid rec'd 91 bbls; light film as in Run #3.

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

TD 8728. PB 7920. (Corr to rept of 12/13/78: all swb depths should be approx 600' higher) 12/13 TP 25 psi. Swb'd as folls: 1st run SF 6600, same returns as on 12/12. Made 7 runs w/FL 5800; SF 7000. Returns on 2nd & 3rd same as above. Returns turned to brown wtr. 9th run started to fall thru gas pockets. SF 7950 (Pkr @ 7965); FL @6100'. Returns were brown wtr. Made swb runs every 1/2 hr (6-1/2 bbls run) w/FL @ 5600'. Made 22 runs today & rec'd 137 bbls. DEC 14 1978

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. No report.

DEC 15 1978

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. Prep to [illegible]n lift. 12/5 ran tbg to 8100'. RU NOWSCO, pmp'd 51,000 cu ft N2 @ 2400 cu ft/min w/2400 psi, down tbg unable to get circ. Pull'd 1880' of tbg. Pmp'd 34,000 cu ft N2 @ 3,000 cu ft/min w/1800 psi. Unloaded approx 10-15 BW. Bled tbg. RIH to 6660'. Used approx 11% of the N2 on location.

DEC 6 1978

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. (Corr to rept of 12/6: pmp'd 51,000 cu ft N2 w/1800 psi instead of 2400 psi.) 12/6 With tbg @ 6660', inj'd 35,000 cu ft N2 @ 2500 cu ft/min w/2000 psi. Blew tbg & csg dry. RIH to 8100' & inj'd 50,000 cu ft N2 @ 2400 cu ft/min w/2000 psi. Bled tbg & csg dry. PU power swivel & mixed 5 gals Arco #488 foam/1000 gals frh wtr. Inj'd 1 bbl foamed wtr/min & 900 cu ft N2/min. Obtained circ @ 600 psi TP. Started rotat'g & tag'd @ 8114'; milled to 8206 & fell free. Went to 8408 & circ'd hole clean; rec'd sml amts of lost circ material & cmt in returns. Went to 8534 & lost circ. Shut off foam wtr & started inj'g straight N2. Incr'd N2 to 1500 cu ft/min @ 1000 psi. Press incr'd to 1500 psi; cut rate to 900 cu ft/min. Pmp'd 50,000 cu ft before get'g good returns. Started get'g some muddy wtr & lrg amts of LCM; returns hotter than normal. Tried to make another conn, but tbg blw'g too hard. Pmp'd 25 BW down tbg - tbg dead; made no conn. RIH & tag'd solid @ 8538. Set 20,000# down; unable to go thru. Pulled tbg into 5-1/2 csg; csg blw'g N2 while while pull'g tbg. SI overnight.

DEC 7 1978

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. CP 550 psi & TP 0 psi. Pmp'd 30,000 cu ft N2 @ 2,000 psi. FL 6000'. Pmp'd 10 BW & tbg dead. RIH to 8534' & started pmp'g N2 down tbg @ 1500 psi; fair circ. Press increased to 3000 psi; unable to inj anymore N2 into tbg. Worked tbg but unable to get circ. Press'd tbg to 4000 psi; unable to blow clean. Pull'd 62' of tbg & pmp'd N2. Press'd to 3000 psi; unable to blow tbg out. Started out of hole w/tbg.

DEC 8 1978

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 12/8 Finished POOH. 12/9 RIH to 8474 & started pmp'g foam @ 2 bbls/min w/ 0 psi. Rotated tbg; took weight @ 8538 & again @ 8657. PU tbg & pull'd 20,000# over the weight of the tbg to get free. Went thru tight spot several times. Went to 8701 & tagged again. Pull'd 20,000# over the weight to get free. Tried to drill but couldn't. Pull'd bit to 8689 & started inj'g N2 @ 1500 cu ft/min @ 1500 psi; got blow on csg but unable to get circ. Pmp'd 90,000 cu ft of N2 but never got circ. POOH. Started RIH w/bit & scratcher. 12/10 Ran bit to 8100'. Pmp'd 85,000 cu ft N2 @ 2500#; blew tbg & csg dry. FL 4,000' foam water in hole. Mixed foam wtr @ 5 gals Arco 488/1000 gals wtr. Pmp'd @ 1 bbl/min & inj'd N2 @ 1200 cu ft/min @ 1100 psi. Circ'd down tbg & got good foam wtr returns. Ran scratcher. Started to lose circ @ 8378. Regained circ & circ'd to 8565; returns turned to muddy foam wtr. Went to 8700 & tag'd solid. Tried making more hole w/out success. SION w/bit @ 8000'.

DEC 11 1978

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728'. PBTD 7920 (47' above FC). Good cmt top @ 5940'. Prepared to mix polymer wtr. Thawed out WH. Ran CBL - GR & CCL logs.

NOV 30 1978

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728'. PBTD 7920' (47' above FC). RU to mix polymer wtr. PU 4-3/4" Hughes bit, bit sub & 140 jts 2-7/8" EUE. Ran tbg to 4200'. SD.

DEC 1 1978

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

DEC 4 1978

TD 8728'. PBTD 7920' (47' above FC)
Finished run'g bit. Tag cement stringers @ 7634' (333' above FC)
12/2: Drill FC, shoe jts & shoe @ 8048' w/reverse circ. Switch to conventional circ while cleaning out 8048 to 8728'. Useing Polymer wtr.
12/3: Rechecked Tally after cmt stringers were reported @ 7634. Corr'd Tally. Should have been 7934' which is 33' above FC. Press test 5-1/2" csg to 3700 psi, 15 min ok. Drill cmt stringer 7934 to FC 7967. Drilled hard cmt to 8002'. Circ clean.
12/4: Thawed out equip w/hot oiler. Drilled cmt to guide shoe 8048 (reverse circ). Drl'd guide shoe @ 8048 w/100 psi pmp press. Ran to 8070 (22' below 5-1/2" csg). Circ'd 50 bbls Polymer wtr. Lost complete circ @ 8070'. Pull'd bit back to 5-1/2" csg to 8030'. Pmp 100 bbls Polymer wtr, 39 vis no indication of circ. Pull'd bit to 7906' (142' above 5-1/2" csg shoe). Mix'd 500 bbls Polymer wtr, 39 vis.

Shell-Harvey-Federal 1-10R (WC)
8800' Kaibab/Toroweap/ Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728. PB 7920. 12/4 RIH to 8048. Pmp'd 250 bbls polymer wtr down tbg @ 5 B/M w/0 psi; slowed rate down to 2-1/2 B/M. Ran bit to 8070 & started tak'g wt. Rotated down to 8114 in 30 mins. Twisted off shaft from hyd pmp on power swivel. Pulled tbg back into 5-1/2 csg. Pmp'd 200 more bbls polymer wtr try'g to obtain circ w/o success. SI well. Took pmp apart & will have oper'g by a.m. Prep to foam lift w/N2.

DEC 5 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8728/109/127/0. Mix'g mu[illegible] Mixed 2nd LCM 200-bbl pill. Pmp'd pill w/no returns. [illegible]mp'd 500 bbls w/no returns. BJ mixed palmix pill (35 bbls) - 21 sx palmix 110R, 120# extender B & 3# brk'r; spt'd OE @ 5464. RIH to 4900' & pmp'd 500 bbls mud w/5% returns. Pmp'd palmix pill #2 (35 bbls) - 21 sx palmix 110R & 3# brk'r @ 4900'. Pulled up & mixed mud. Lost approx 1300 bbls.

NOV 3 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

11/4: 8728/109/128/0. Mix'g mud: Circ'd @ 4700 & 5050. CO to 5400. RIH to 8320; no bridges.
Mud: (.447) 8.6 x 43 x 7.2
11/5: 8728/109/129/0. POOH to run csg. Spt'd 5 bbls palmix 110R @ 8310. POOH to 5400 & spt'd 5 bbls palmix 110R; both palmix plugs set to degrade in 10-12 days. Waited on plugs to set. Hole started blw'g gas out both DP & annulus slowly; SI well & had 10 psi on csg. Pmp'd total of 150 bbls down DP; gas would not light. Opened well; gas died after mud pmp'd. RIH to 8260 & tag'd palmix plug; no bridges. Pmp'd 150 bbls down DP. POOH; pmp'g 20 B/H down annulus.

NOV 6 1978

Mud: (.447) 8.6 x 43 x 6
11/6: 8728/109/130/0. ND BOP's. Ran 200 jts 5-1/2", 17#, K55, SFJ & LT&C csg to 8048'. Cmt'd csg w/102 sx Class "B" w/2% low dense & 1/4#/sx cello flake. Tailed in w/56 sx "B" w/.003% R11 & 1/4#/sx cello flake. Bumped plug @ 10 p.m. 1/5/78. Shoe @ 8048 & FC @ 7967'.

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

8728/109/131/0. Clean'g mud tanks. ND BOP's, LD DP & installed WH.

NOV 7 1978

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

8728/109/132/0. MORT. Released rig @ 12 noon 11/7/78.
(Report discontinued until further activity)

NOV 8 1978

Shell-Harvey-Federal 1-10R
(WC)
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'

TD 8728'. (RRD 11/8/78) 11/29 RU to run CBL log.

NOV 29 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8728/109/120/0. Rigging up to run velocity survey. Logs ran temp survey, DLL/MSFL/GR/GL/TTI/Dip meter. Lost 300 bbls mud while logging.
Mud: (.447) 8.6 x 59 x 5.6

OCT 27 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

10/28: 8728/109/121/0. Run'g SWS. Took velocity surveys. TIH; no bridges or fill. Circ & cond hole. Made 2 runs for SWS; 1st run no shots. Same rec on 2nd run. Lost approx 200 bbls mud log'g.
Mud: (.447) 8.6 x 53 x 5.8

10/29: 8728/109/122/0. Mix'g mud vol. Rec'd 106 SWS out of 259 shots; 7 bullets left in hole, 21 rec'd containing no smpls & 124 shots never fired. Lost 1500 bbls mud while tak'g SWS.
Mud: (.447) 8.6 x 46 x 5.7

OCT 30 1978

10/30: 8728/109/123/0. WO wtr. Blt mud & circ'd @ 5156; 10% returns. Pulled to 4216 & circ'd; 70-80% returns. Ran to 5156; 10% returns, then ran to 5626 & got 5% returns. Pmp'd 60-70, vis 20, 16#/bbl LCM & ran out of mud. Trip'd to csg shoe. Mixed mud & blt vol. WO wtr in order to continue to mix when circ'g. Lost approx 1500 bbls mud last 24 hrs. Hit bridges @ 5600 & 5620; fell thru w/no drag.
Mud: (.447) 8.6 x 43 x 5.6

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8728/109/124/0. Mix'g mud. Staged in 4 stds @ a time w/5% returns. Hit bridges @ 6280 & 6290; lost all returns. Pulled to 5344 w/10% returns & ran out of mud. Pulled to shoe. Lost 1500 bbls mud last 24 hrs.
Mud: (.447) 8.6 x 41 x 5.4

OCT 31 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8728/109/125/0. Bld'g vol. Mixed & pmp'd away mud. Tried pmp'g 3000 CFM air down DP & 200 GPM mud; got some thick mud back, then normal mud. Got approx 75% returns by pmp'g air down DP & approx 50% returns by using parasite string. Lost approx 2000 bbls last 24 hrs.
Mud: (.447) 8.6 x 44 x 5.8

NOV 1 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8728/109/126/0. Mix'g mud. Pmp'd 400 bbls mud down hole. Ran Geotek spinner temp tracer survey & hit bridge @ 5614'. LD 22 DC's & RIH OE to 4700'. Mixed hvy pill & pmp'd 200 bbls. Mixed 2nd hvy pill. Found loss zones @ 5070 (minor), 5400-10 (major) & 5445-55 (major). No loss below 5455. FL @ 4565. Lost 700 bbls mud.
Mud: (.447) 8.6 x 40 x 6

NOV 2 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

7635/109/113/128. Drlg. Dev: 4 deg @ 7515'.
Mud: (.447) 8.6 x 45 x 5.6

OCT 19 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

7922/109/114/287. Circ'g for trip.
Mud: (.447) 8.6 x 40 x 5.8

OCT 20 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

OCT 23 1978

10/21: 7970/109/115/48. Drlg. Magnafluxed DC's & subs, ok. Press tested pipe & blind rams to 2500# & hyd to 1500#, ok. Dev: 10 deg @ 6422'; will run chk shot. Lost 300± bbls mud on trips.
Mud: (.447) 8.6 x 41 x 6
10/22: 8140/109/116/170. Drlg. Brk circ, ream 90' to btm & worked junk sub; no fill. Dev: 1-1/2 deg @ 5800'. Lost 100 bbls mud on trip.
Mud: (.447) 8.6 x 44 x 5.8
10/23: 8468/109/117/328. Trip'g for bit. Losing 20 bbls mud/hr while drlg.
Mud: (.452) 8.7 x 45 x 5.8

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8672/109/118/204. Drlg. Brk circ & washed 90' to btm; no fill. Losing 15-20 B/H while drlg. Lost 250± bbls on trip. Dev: 4-3/4 deg @ 8468'.
Mud: (.447) 8.6 x 43 x 5.6

OCT 24 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8728/109/119/56. Log'g. Lost circ @ 8928 & trip'd to shoe. TIH to 6410 & pmp'd 140 bbls mud. Trip'd to btm & tried to brk circ; plug'd. Tried to unplug bit; TOOH wet. RU & ran DIL/SP/GR. Logs went to 8699.
Mud: (.447) 8.6 x 34 x 5.7

OCT 25 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

8728/109/120/0. Prep to log. Ran FDC/CNL/GR/Cal. Pmp'd 150 bbls mud w/50 psi on parasite string. Circ'd & blt mud. TOOH to log.
Mud: (.447) 8.6 x 48 x 6.2

OCT 26 1978

Shell-Harvey-Federal 1-10R 5893/109/105/86. Drlg. Ma fluxed DC's. Tested BOP,
(WC) Brinkerhoff #17 all related equip & hyd, ok. Lost approx. 30 bbls mud
8800' Kaibab/Toroweap/ on trip.
Redwall Test Mud: (.447) 8.6 x 45 x 5.9 OCT 11 1978
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

Shell-Harvey-Federal 1-10R 5914/109/106/21. TIH w/Core #4. TIH w/core bbl. Reamed
(WC) Brinkerhoff #17 207' to btm w/core bbl; tight hole. TOOH w/core. Core
8800' Kaibab/Toroweap/ #4 - 5905-5914; cut 9' & rec'd 7'.
Redwall Test Mud: (.447) 8.6 x 44 x 6
EL 9746' GR
24" csg @ 700' OCT 12 1978
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

Shell-Harvey-Federal 1-10R 6005/109/107/91. Drlg. TOOH & LD core bbl. Core #5 -
(WC) Brinkerhoff #17 5914-5933; cut 18' & rec'd 5.5'.
8800' Kaibab/Toroweap/ Mud: (.447) 8.6 x 43 x 5.8 OCT 13 1978
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

Shell-Harvey-Federal 1-10R 10/14: 6355/109/108/350. Drlg.
(WC) Brinkerhoff #17 Mud: (.452) 8.7 x 42 x 5.7
8800' Kaibab/Toroweap/ 10/15: 6690/109/109/335. Drlg.
Redwall Test Mud: (.452) 8.7 x 42 x 5.9
EL 9746' GR 10/16: 6994/109/110/304. TIH.
24" csg @ 700' Mud: (.452) 8.7 x 44 x 5.9
16" csg @ 1538'
9-5/8" csg @ 3400' OCT 16 1978
7-5/8" csg @ 5000'

Shell-Harvey-Federal 1-10R 7283/109/111/289. Drlg. Washed & reamed 60' to btm.
(WC) Brinkerhoff #17 Mud: (.452) 8.7 x 45 x 5.8
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR OCT 17 1978
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

Shell-Harvey-Federal 1-10R 7507/109/112/224. Drlg.
(WC) Brinkerhoff #17 Mud: (.452) 8.7 x 45 x 6
8800' Kaibab/Toroweap/
Redwall Test OCT 18 1978
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

10/3: 5323/109/97/34. Cutting drilling line.
11-1/2 hrs. coring.
Core #1 - 5289-5323; cut 34' & rec'd 28'.
Mud: (.447) 8.6 x 43 x 5.2
10/4: 5346/109/98/23. TIH for Core #3.
Core #2 - 5323-5346; cut 23' & rec'd 18'.
Mud: (.534) 9.7 x 45 x 5.5 OCT 04 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

5364/109/99/18. Run'g DST #1. Core #3 - 5346-5364; rec'd 16'. PU DST tool & RIH. Set pkr @ 4950 w/tail pipe @ 4995. Opened tool @ 5:30 a.m. for 10-min flw.
Mud: (.452) 8.7 x 45 x 5.2

OCT 05 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

5406/109/100/42. Drlg. DST #1 - 10-min flw, 80-min SI due to daylight, 90-min flw & 180-min SI. Rev'd mud out DP & unloaded csg mud rec. POOH & LD test tools. Rec'd approx 10 bbls sli gas-cut mud. PU 20 jts 3-1/2 DP & washed to btm. FL on trip 2150. OCT 06 1978
Mud: (.452) 8.7 x 40 x 5.8

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

10/7: 5460/109/101/54. Log'g. TIH to shoe & lost circ (175 bbls). Mixed LCM & cond mud. Log'd from 5460-csg shoe. Ran DIL/SP, FDC/CNL/GR/Cal; CNL to 2000'.
Mud: (.447) 8.6 x 41 x 5.7
10/8: 5460/109/102/0. TIH w/bit. Ran BHC/GR/Cal. Worked stuck dipmeter tool @ 5417 & pulled off tool w/rig @ 12,000#. TIH w/fish'g tools, caught fish & chained out. LD fish & tools.
Mud: (.447) 8.6 x 44 x 5.4 OCT 09 1978

10/9: 5673/109/103/213. Drlg. Washed 120' to btm. Mixed LCM & cond mud.
Mud: (.447) 8.6 x 43 x 5.1

OCT 09 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3400'
7-5/8" csg @ 5000'

5807/109/104/134. Drlg. Washed 60' to btm; no fill.
Mud: (.447) 8.6 x 42 x 5.9

OCT 10 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

4669/109/90/219. Drlg.
Mud: (.452) 8.7 x 49 x 5.6

SEP 26 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

4891/109/91/222. Drlg.
Mud: (.468) 9 x 51 x 5.8

SEP 27 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

5000/109/92/109. Log'g. Circ'd & cond for logs. Ran DIL8/SP/GR & FDC/CNL/GR. Left btm w/550 psi on parasite string. Pulled 18 stds & added 25 bbls mud. Press drop'd to 400 psi. When going to btm, press blt to 1100 psi. Started circ'g & after get'g on btm, hole unloaded. Started out to log; had 475 psi on parasite string. Added 20 bbls mud & press began holding. After adding 10 bbls mud/hr while log'g; hole filled to sfc & held.
Mud: (.468) 9 x 48 x 5

SEP 28 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

No report.

SEP 29 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'
7-5/8" csg @ 5000'

9/29: 5000/109/93/0. Log'g.
9/30: 5000/109/94/0. PU 4-3/4 DC's. Ran 40 jts 7-5/8" 33.7# S95 csg to 5000'. Btm of Shoe @ 5000', top of FC @ 4908 & top of liner hanger @ 3278. Cmt'd w/160 sx Class B, 10# Gyp, 2% A7. Bumped plug @ 3:45 p.m. 9/29; good circ thruout job.
10/1: 5135/109/95/135. Drlg. Drld FC. Press tested csg & liner hanger lap to 1500 psi 30 mins, ok. Drld cmt & shoe.
Mud: (.452) 8.7 x 42 x 5.3
10/2: 5289/109/96/154. TIH to shoe.
Mud: (.457) 8.8 x 43 x 5.9

OCT 0 2 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'
7-5/8" csg @ 5000'

No report.

OCT 03 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

9/16: 3441/109/80/94. PU BHA. Schl ran DIL/SP/GR from 3441-1538 & GR from 1538-sfc. RU Schl & ran repeats on above logs; RD Schl.
Mud: (.452) 8.7 x 54 x 5.6
9/17: 3441/109/80/0. Run'g 9-5/8" csg. Reamed hole from 2060-TD & circ'd btms up.
Mud: (.452) 8.7 x 49 x 5.5
9/18: 3441/109/81/0. WO Howco tools. Ran 84 jts 40# K55 ST&C csg to 3440' w/2-1/16" parasite string. GS @ 3440, Insert Float @ 3363 & parasite @ 2800. Pmp'd down DP & parasite string. Ran Howco EZ SV ret; unable to set ret. 11 hrs Attempted to set ret. POOH while WO ret. Ret loaded w/LCM, but should have set.
Mud: (.452) 8.7 x 47 x 5.8

SEP 18 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

3441/109/82/0. ND 20" stack. RIH w/new ret. RU & cmt'd 1st stage w/670 sx Class "B" Thixotropic w/2% CaCl2. POOH & WOC. Cmt'd 2nd stage thru 16" parasite string w/140 sx "B" Thixotropic w/2% CaCl2. WOC & ran 1" to 250' betwn 16" & 9-5/8" csg. Cmt'd thru 1" w/300 sx Class "B" w/2% CaCl2 & cmt to sfc. ND 20" & cut 9-5/8".

SEP 19 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

3441/109/83/0. NU. Welded hd & tested to 2000#, ok.

SEP 20 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

3441/109/85/0. Drlg cmt. Pulled stack because of leak & repl'd "O" ring. Tested csg to 2500#, blind & pipe rams to 2500# & hyd to 1500#. PU 3 7" DC's & SLM in hole. Tag'd ret @ 3297'.
Mud: (.447) 8.6 x 43 x 4.8

SEP 21 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

3582/109/86/141. RIH w/new bit. DO cmt ret, insert & shoe; no cmt betwn insert & shoe @ 3363-3439. Dev: 1/2 deg @ 3580'.
Mud: (.447) 8.6 x 48 x 5.7

SEP 22 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'

9/23: 3965/109/87/383. Drlg.
Mud: (.462) 8.9 x 52 x 5.2
9/24: 4222/109/88/257. TOOH for new bit.
Mud: (.452) 8.7 x 48 x 5.8
9/25: 4450/109/89/228. Drlg. Washed 40' to btm; no fill.
Mud: (.457) 8.8 x 50 x 5.5

SEP 25 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

2528/109/72/143. Drlg. Dev: 5-1/2 deg @ 2426' & 6 deg @ 2488'.
Mud: (.462) 8.9 x 44 x 5.4

SEP 08 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

SEP 11 1978

9/9: 2628/109/72/100. Drlg. Lost circ @ 2558. Mixed 100-bbl LCM pill w/sawdust & spt'd @ shoe. Spt'd 2 LCM pills w/20#/bbl sawdust @ 1538'. Blt vol & cond mud. Brk circ & reamed to btm; no fill or tight hole. Lost total of 1000 bbls mud last 24 hrs.
Mud: (.442) 8.5 x 42 x 7.5
9/10: 2832/109/74/204. Drlg.
Mud: (.452) 8.7 x 47 x 6.2
9/11: 2975/109/75/143. Drlg. Drld w/reduced pmp & wt due to mud seepage. Added 25 sx pill of Quick Seal & got full returns. Dev: 4 deg @ 2863'.
Mud: (.452) 8.7 x 47 x 6

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3167/109/76/192. Drlg. Dev: 1-3/4 deg @ 3034'.
Mud: (.452) 8.7 x 46 x 5.9

SEP 12 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3230/109/78/63. TIH. Dev: 1 deg @ 3230'. Repaired #1 & #2 pmps - 10-1/2 hrs.
Mud: (.457) 8.8 x 43 x 6

SEP 13 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3258/109/78/28. Clean'g mud pit. When air compressors went down, lost 600 bbls mud. Blt vol while WO compressors. Circ & cond mud w/circ @ reduced rate; lost 300 bbls mud.
Survey: 3230'/1 deg/S70E.
Mud: (.447) 8.6 x 45 x 6.5

SEP 14 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3347/109/79/89. Drlg. Pulled up into csg & blt vol. TIH & drld w/reduced rate w/maintaining mud vol w/47 BW/H. Drld w/full returns & gradually incr'd pmp from 28 to 60 SPM. Lost 1000 bbls mud last 24 hrs.
Mud: (.447) 8.6 x 46 x 6.4

SEP 15 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

3634/109/63/0. Cut'g drlg line. Washed over fish & TIH w/skirted sub & screwed into fish. Jarred on fish, ran sinker bar & shot DP @ 2770'; would not pull. LD wash pipe & cut drlg line. (Went in & shot DP 2' above heavy wall DP. Jar'd 1/2 hr; could not jar loose. started torque'g up DP to make back off @ 2645'. Twisted DP in two 6' below. Rec'd 1' DP & 6' stub. Top of fish now @ 2652'.) AUG 30 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

2190/109/64/0. WOC. Cut drlg line. PU DP & TIH to set kick off plug. Cmt'g; cmt'd w/640 sx Class "B" + 1 1/2% CFR2 17# ppg. Plug in place @ 5:00 p.m. 8/30/78. Had full returns while cmt'g.

AUG 31 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

2049/109/65/0. Tripping.
CO to top of cmt to 2049. While going in for sidetrack, hit bridges 1822-2032, hard cmt @ 2032. drl'd to 2049.
Mud: (.477) 8.6 x 68 x 5.8

SEP 01 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

9/2: 2092/109/66/43. Dynadrlg. Surveys as folls: 1655/0.15/S22E, 1749/0.45/S17E, 1963/0.30/S12E, 2030/0.15/S60E.
Mud: (.462) 8.9 x 48 x 4.8
9/3: 2191/109/67/99. Circ for survey.
Mud: (.447) 8.6 x 62 x 5.2
9/4: 2222/109/68/31. TOOH. Circ'd & washed to btm; 20' fill. Dynadrld 2212-2222. Try'g to retrieve survey; line broke.
Mud: (.447) 8.6 x 52 x 5
9/5: 2306/109/69/84. Trip'g for bit & BHA. Surveys: 2242/1-3/4 deg/S61E & 2265'/3 deg/S65E.
Mud: (.452) 8.7 x 45 x 6.4

SEP 05 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

2350/109/70/44. Drlg. Washed & reamed thru dynadrl run. 14 hrs repairing rotary clutch & trip'g to btm.
Survey: 2280'/4 deg/S70E.
Mud: (.447) 8.6 x 44 x 6

SEP 06 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

2385/109/71/35. Drlg. PU BHA & HWDP & TIH. Reamed thru dynadrl run. Survey: 2347'/6 deg 15'/S70E.
Mud: (.447) 8.6 x 48 x 5.9

SEP 07 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3634/109/56/0. RIH to tag PAL plug. RIH & tag'd bridge @ 1825'; washed hole to top of fish @ 2300' (few minor bridges & 20' of fill on top of fish). Cond'd hole above fish & POOH; no drag, LD bit & picked up jet sub. RIH 17 stds; mixed & pmp'd 100 bbls 110-R mixed 35# per bbl & 1.8# per bbl extender & 5 gals 235-A across 1625-1550'. Preceded w/30 bbls mud & followed by 15 bbls mud. POOH & mixed mud & WO plug. RIH to tag plug; FL in annulus 400'
Mud: (.442) 8.5 x 53 x 12.0

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3634/109/57/0. Circ. RIH w/14-3/4" bit & reamed bridges @ 1638-1670'(went to top of fish). Circ'd @ 2302; get'g gray shale over shaker. POOH & picked up 4 jts (108') of wash pipe & RIH; got over fish (no fill on top of fish). Washed from 2302-2410'. Circ'd hole. Note: No apparent wtr cut in mud.

AUG 24 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3634/109/58/0. Washing over fish. Circ'd over fish & POOH & picked up 2 jts wash pipe & set in derrick. Picked up fish'g tools & RIH. Attempted outside back off @ 2364'; grapple slipped. POOH & broke out overshot. Picked up wash pipe & RIH; hole clean, no drag or fill. Washed to 2302-2450, (flw but no torque or drag). FL after back off @ 1000'
Mud: (.457) 8.6 x 58 x 10

AUG 25 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

8/26: 3634/109/58/0. RIH w/wash pipe. Washed to 2467'. POOH w/wash pipe & RIH w/6" overshot. Attempted to latch on fish; would slip @ 30,000#. Shot FL @ 1260'. POOH w/fish. Picked up skirted screw in sub & screwed into fish. Ran sinker bar to 3000'; freepoint, backed off @ 2455'; rec'd 5 jts DP. LD fish & overshot & RIH w/6 jts wash pipe.
Mud: (.457) 8.6 x 47 x 7.6
8/27: 3634/109/60/0. Washing over fish. Washed to 2514, hole sticky. Pulled 2 stds & washed back to 2514, reaming last 50'. Washed to 2525 & torque built up. POOH, changed shoe on wash pipe & RIH & washed to 2565.
Mud: (.457) 8.6 x 47 x 7.6
8/28: 3634/109/60/0. LD 5 jts DP. Washed to 2571 & lost returns. Pulled wash pipe to shoe, built vol & mixed LCM. RIH to top of fish & established returns. Washed over fish to 2622 (165' fish). Circ'd & conditioned hole. POOH LD wash pipe. RIH w/screw in sub. Screwed into fish & attempted to circ; could not circ thru DP. Jarred on fish, ran freepoint & fish free to 2622'. Backed off @ 2614'. POOH w/5 jts DP.
Mud: (.457) 8.6 x 48 x 7.8

AUG 28 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3634/109/61/0. TOOH. Washed over from 2622-2653' (31'). Top of fish @ 2614'; rec'd 5 jts DP, (2 jts were cut w/ wash over shoe).

AUG 29 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

8/12: 1897/109/45/209. Trip'g.
Mud: (.447) 8.6 x 35
8/13: 2105/109/46/208. Drlg.
Mud: (.457) 8.6 x 37
8/14: 2360/109/48/255. Drlg.
Mud: (.447) 8.6 x 36

AUG 14 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

2585/109/48/225. Drlg. 3000 CFM @ 520 psi down parasite string.
Mud: (.452) 8.7 x 36

AUG 15 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

2890/109/48/305. POOH.
Mud: (.447) 8.6 x 35

AUG 16 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

No report.

AUG 17 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

8/17: 3050/109/50/160. Drlg.
Mud: (.447) 8.6 x 34
8/18: 3355/109/50/305. Reaming hole. Magnafluxed DC's, HWDP, subs & jars; all ok.
Mud: (.452) 8.7 x 35

AUG 18 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

8/19: 3435/109/52/80. Drlg. Ream hole from 1600-3355' to 14-3/4". Lost approx 500 bbls mud.
Mud: (.447) 8.6 x 33
8/20: 3634/109/52/199. WO freepoint unit. Worked pipe & wait on Dialog. Jarred for 2 hrs then jars would not reset. Dialog truck broke down.
Mud: (.447) 8.6 x 33
8/21: 3634/109/54/0. Picking up wash pipe. Ran free point & back off @ 2300'. Fish consists of BHA & 5 stds 4-1/2 DP.
Mud: (.447) 8.6 x 44

AUG 21 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

3634/109/55/0. Cond. mud. PU 4 jts wash pipe, bumper sub & 6 jts 7" DC's & RIH. Cond mud & built vol. Tag'd fill @ 1854'; 446' above fish. POOH LD washpipe & jars. PU 14-3/4" bit, 3 7" DC's & RIH. Cond mud & built vol. Note: There appears to be an underground flw of fresh wtr, mud is wtr cut & chromates are cut in half when circ btms up after a trip.

AUG 22 1978

Shell-Harvey-Federal 1-10R 1420/109/36/249. Drlg.
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

AUG 3 1978

Shell-Harvey-Federal 1-10R 1625 (731)/109/37/205 (11). Drlg 22" hole. Washed hole; hole fell in. TOOH LD DP & picked up 22" hole opener & RIH.
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

AUG 04 1978

Shell-Harvey-Federal 1-10R 8/5: 1229/109/38/498. Drlg. Opening 22" hole from 731 to 1229'.
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

8/6: 1536/109/39/307. Trip'g out. Opening hole from 1229 to 1536'.
8/7: 1625/109/40/89. Circ'g for csg. Opened hole from 1536 to 1625'.

AUG 07 1978

Shell-Harvey-Federal 1-10R 1625/109/40/0. Prep to run csg. Trip'g & conditioning hole to run 16" csg.
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

AUG 08 1978

Shell-Harvey-Federal 1-10R No report.
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

AUG 09 1978

Shell-Harvey-Federal 1-10R 8/9: 1625/109/41/0. WOC. Ran 40 jts 16" 75# K-55 ST&C csg (1540') w/2-1/16 IJ tbg parasite string attached. Csg stop'd @ 1561. Worked csg in tight hole & pulled free to 1538'. RU Howco & cmt'd thru 4-1/4 DP w/750 sx "G" w/1/4#/sx flocele & 2% CaCl2. CIP @ 1:55 a.m. 8/9/78. Flushed parasite string w/10 bbls wtr; no cmt retruns while cmt'g. Spot'd 200 sx "G" w/2% CaCl2 thru 1" pipe @ 100' to sfc. Parasite string @ 1479'.
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

8/10: 1625/109/42/0. LD stabilizers. NU BOP & LD hole openers & stabilizers.

AUG 10 1978

Shell-Harvey-Federal 1-10R 1688/109/43/63. Drlg. Finished trip'g in hole & re-tightening hydril & flanges. Tested hyd to 800# for 15 mins, ok. Mud: (.452) 8.7 x 43
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'
16" csg @ 1538'

AUG 11 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

425/109/23/26. Opened hole to 28". Pmp'd mist but got air back. Changed out BHA & washed to btm. Opened hole from 399-425'. Run'g approx 60 bbls wtr and 10 gals soap per hr & getting returns.

JUL 21 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

7/22: 510/109/24/85. Open'g hole to 28". (Corr to report of 7/21; Run'g 30 bbls wtr & 10 gals soap per hr.)
7/23: 570/109/25/60. Open'g hole to 28".
7/24: 628/109/26/58. Open'g hole to 28".

JUL 24 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

711/109/27/83. Open'g hole to 28".

JUL 25 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

711/109/28/0. Ream'g hole. RU csg crew & ran csg; hit ledge @ 90'; unable to work past. Pulled csg & stand back in derrick. Reamed 60-90'; assembly will pass if not rotating, but catches somewhat if rotating down. JUL 26 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

711/109/29/0. Run'g 24" csg.
Csg stop'd @ 475'; now working thru tight spot.

JUL 27 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

711/109/30/0. Ream'g 28" hole to 711'. Hit ledge @ 475'; work'd free w/1 bbl soap pmp'd down annulus. Hit ledge @ 515'; worked free w/2 bbls soap. POOH & LD csg. Changed out BHA & RIH & tag'd btm w/no problems. Pulled up 9 jts & reamed to btm, pulled 12 jts & reamed to btm. Only get torque if run'g 1-2000#; any more wt & pipe falls to btm free. JUL 28 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

7/29: 711/109/31/0. WOC. Ran & cmt'd 17 jts 24" csg to 700'. Cmt'd csg w/800 sx Class "B" 1% Lodense + 1/4#/sx CEL flake followed by 350 sx Class "B" 2% CaCl2 + 1/4#/sx CEL flake. Did not get any returns. Cmt'd around annulus w/6 yards of redimix.
Magnafluxed DC's, lift subs, kelly, all subs, HWDP, jars stabilizers, shock sub & elevators. Found cracked pin on kelly, 3 cracked lift subs & 1 bad face on box of 1 10-3/4 DC.
7/30: 720/109/32/9. Drlg 22" hole. Drlg cmt, shoe & hole to 720'. Tag'd cmt @ 696'.
7/31: 824/109/33/104. Drlg 17-1/2" hole.

JUL 31 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

930/109/34/106. Drlg.

AUG 1 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR
24" csg @ 700'

1171/109/35/241. Drlg.

AUG 2 1978

Shell-Harvey-Federal 1-1
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

7/8: 576/109/10/150. Drlg.
7/9: 715/109/11/139. LD tools. Prep to GIH w/reamer.
Dev: 1/2 deg @ 715'.
7/10: 715 (reamed 91')/109/12/reamed 28'. WO Kelly Bushing.

JUL 10 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

715 (reamed 105' corr'd)/109/13/reamed 27'. Drlg 28" hole. Having problems making connections; hole keeps falling in.

JUL 11 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

715 (reamed 147')/109/14/reamed 42'. Reaming.

JUL 12 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

7/12: 715(145 corr'd)/109/14/reamed 40'. Reaming.
7/13: 715(146)/109/15/reamed 1'. WO air compressor repairs.

JUL 13 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

715(169)/109/16/reamed 23'. Reaming.

JUL 14 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

7/15: 184/109/17/15. RIH. 17-1/2" bit was plug'd & got hot, reamer ok. DC clamp broke off & fell in hole; rec'd all lst rip in with magnet.
7/16: 259/109/18/75. Drlg. Reaming 28" hole.
7/17: 378/109/19/119. Drlg.

JUL 17 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

399/109/20/21. Working to btm. Opened 28" hole to 399'; tight connection. Pulled 3 jts, hole tight. Pulled & check stabilizers, ok. RIH & hit bridge @ 309'. Reamed bridge; loosing returns below bridge.

JUL 18 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

399/109/21/0. Pmp'g mud & working pipe. Worked hole opener thru 368'-288', hole was free; boulders fell in & was stuck @ 352'. Worked pipe, ran free point, stuck above 27" bladed stabilizer. Building mud & LCM.
Mud: (.447) 8.6 x 32

JUL 19 1978

Shell-Harvey-Federal 1-10R
(WC) Brinkerhoff #17
8800' Kaibab/Toroweap/
Redwall Test
EL 9746' GR

399/109/22/0. CO. Pmp'd mud down slowly & slowly worked pipe free. POOH & LD BHA. Changed BHA & RIH; reamed to btm, 300-400' interval had some torque and fill. Pmp'd air mist down getting only air back. Hole appears to be falling in 4 jts off btm.

JUL 20 1978

DRILLING WELL PROGNOSIS

WELL NAME: Shell - Harvey Federal 1-10R
TYPE WELL: Wildcat
FIELD / AREA: Zinc

APPROX. LOCATION (SUBJECT TO SURVEY): NW ¼ Sec. 10, T32S, R1E

EST. G. L. ELEVATION 9747' PROJECTED TD 8,800' OBJECTIVE Kaibab - Toroweap - Redwall
(+ 947) Surface formation: Volcanics (Tert.)

HOLE SIZE	CASING PROGRAM	LOGGING PROGRAMS	MAX DEV.	DEPTHS AND FORMATION TOPS	SPECIAL INSTRUCTIONS
17½" hole-open to 27"	24"	Two Man Mud Logging Unit	1° per 1000 feet	24" csg 700' +	SAMPLES: 10 ft: surface - 5000' 5 ft: 5000' - TD
17½" hole-open to 23"	16" to Surface	DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Son./GR/Cal; Dipmeter		Wasatch 975' (+8,772) Navajo 1,650' (+8,097) 16" csg 2,000±	CORES: Kaibab (50 ft); Toroweap (50 ft); Redwall (50 ft)
9 7/8" under-ream to 15"	9-5/8" to Surface	DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Son./GR/Cal; Dipmeter		Chinle 3,585' (+6,162) Moenkopi 4,405' (+5,342) 9-5/8" csg 5,000±	DST'S: Kaibab (1); Toroweap (1); Redwall (1) DEVIATION CONTROL: Dogleg severity to be less than 1½° per any 100' interval.
8-3/4"	7" liner	DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Sonic/GR/Cal; Dipmeter		Timpoweap 5,040 (+4,707) Kaibab 5,285' (+4,462) Toroweap 5,467' (+4,280) 7" csg as required liner Atoka 7,374' (+2,373)	CEMENT 24": cement to surface 16": cement to surface 9-5/8": cement bottom 2000' 7": entire liner length or bottom 2000'
6-1/8" as required		DIL/SP/GR; FDC/CNL/GR/Cal; BHC-Sonic/GR/Cal; Dipmeter		Redwall 7,665' (+2,082) Elbert 8,790' (+957) TD 8,800'	MUD Surface - 700': Air 700' - 2000': Lime water/gel & air 2000' - 5000': Lime water/gel + parasite string @1900' ± 5000' - TD: Lime water/gel + parasite string @4500' ±

ORIGINATOR: D. G. Nordquist DATE 4/5/77 Revised 5/10/77

D. G. Nordquist

ENGINEERING APPROVAL:

PETROLEUM:

OPERATIONS:

ATTACHMENT 1

OPERATIONS APPROVAL:

4/7/77

DIV. DRILLING SUPT.

JOHNSTON

Schlumberger

technical report

COMPANY SHELL OIL COMPANY WELL FEDERAL #1-10 TEST NO. 1 COUNTY GARFIELD STATE UTAH

F.R. # 22698 D

JOHNSTON
Schlumberger

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	0528	–	1/8''
BLOW, 3'' IN WATER			
BLOW OFF BOTTOM OF BUCKET	0534	–	''
BLOW, 12'' IN WATER			
	0535	1	''
CLOSED FOR INITIAL SHUT-IN	0538	–	''
RECYCLED TOOL TWICE			
FINISHED SHUT-IN	0700	–	''
RE-OPENED TOOL	0702	–	''
BLOW, 2'' IN WATER			
BLOW OFF BOTTOM OF BUCKET	0703	–	''
	0705	1	''
	0707	2	''
	0710	6	''
	0716	9	''
	0719	10	''
	0721	11	''
	0728	14	1/4''
CO_2 ODOR	0742	14	''
CLOSED FOR FINAL SHUT-IN	0833	14	''
FINISHED SHUT-IN	1133	–	–
STARTED REVERSING	1145	–	–
FINISHED REVERSING	1300	–	–
PULLED PACKER LOOSE	1333	–	–

Cushion Type	Amount	Pressure	Bottom Choke
	–		Size 3/4''

MUD DATA

Mud Type DISPERSED Wt. 8.9
Viscosity 47 Water Loss 3.1 C.C.
Resist: of Mud 1.2 @ 65 °F; of Filtrate 1.1 @ 64 °F
Chloride Content 700 PPM

EQUIPMENT & HOLE DATA

Type Test M.F.E. CASING
Formation Tested KAIBAB
Elevation 9746 GROUND Ft.
Net Productive Interval 364 Ft.
Estimated Porosity 5 %
All Depths Measured From KELLY BUSHING
Total Depth 5364 Ft.
Main Hole/Casing Size 7 5/8'' X 33# AT 5000'
Rat Hole/Liner Size 6 1/2''
Drill Collar Length 921' I.D. 2 1/4''
Drill Pipe Length 2707'; 1288' I.D. 3.8''; 2.25'
Packer Depth(s) 4946 & 4950 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure 100 P.S.I.G. at Surface
Recovery: Cu. Ft. Gas * .35
cc. Oil –
cc. Water –
cc. Mud 1500
Tot. Liquid cc. 1500
Gravity – °API @ – °F.
Gas/Oil Ratio – cu. ft./bbl.

	RESISTIVITY			CHLORIDE CONTENT
Recovery Water	–	@ –	°F.	– ppm
Recovery Mud	1.2	@ 64	°F.	
Recovery Mud Filtrate	1.0	@ 63	°F.	800 ppm
Mud Pit Sample	1.2	@ 65	°F.	
Mud Pit Sample Filtrate	1.1	@ 64	°F.	700 ppm

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
REVERSED OUT:						@ °F.	@ °F.	
(ESTIMATED) SLIGHTLY GAS CUT	–	–				@ °F.	@ °F.	
MUD.						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks: ANNULUS TAKING FLUID ALL DORING TEST- 40' PER HOUR. TESTING OPEN HOLE BELOW CASING.
*GAS SAMPLE CAUGHT FROM SAMPLE CHAMBER PRIOR TO MEASURING GAS.

Address P.O. BOX 576; HOUSTON, TEXAS 77001

Company SHELL OIL COMPANY Field WILD CAT
Well FEDERAL #2-10 Location SEC. 10 - T-32S, R-1E
Test Interval 4950' TO 5364' Test # 1 Date 10-5-78

County GARFIELD State UTAH Field Report No. 22698 D
Technician SIMPER(ROCK SPRINGS) Approved By MR. J.A. JANSON No. Reports Requested 10(4X'S)

JOHNSTON Schlumberger

BOTTOM HOLE PRESSURE AND TIME DATA

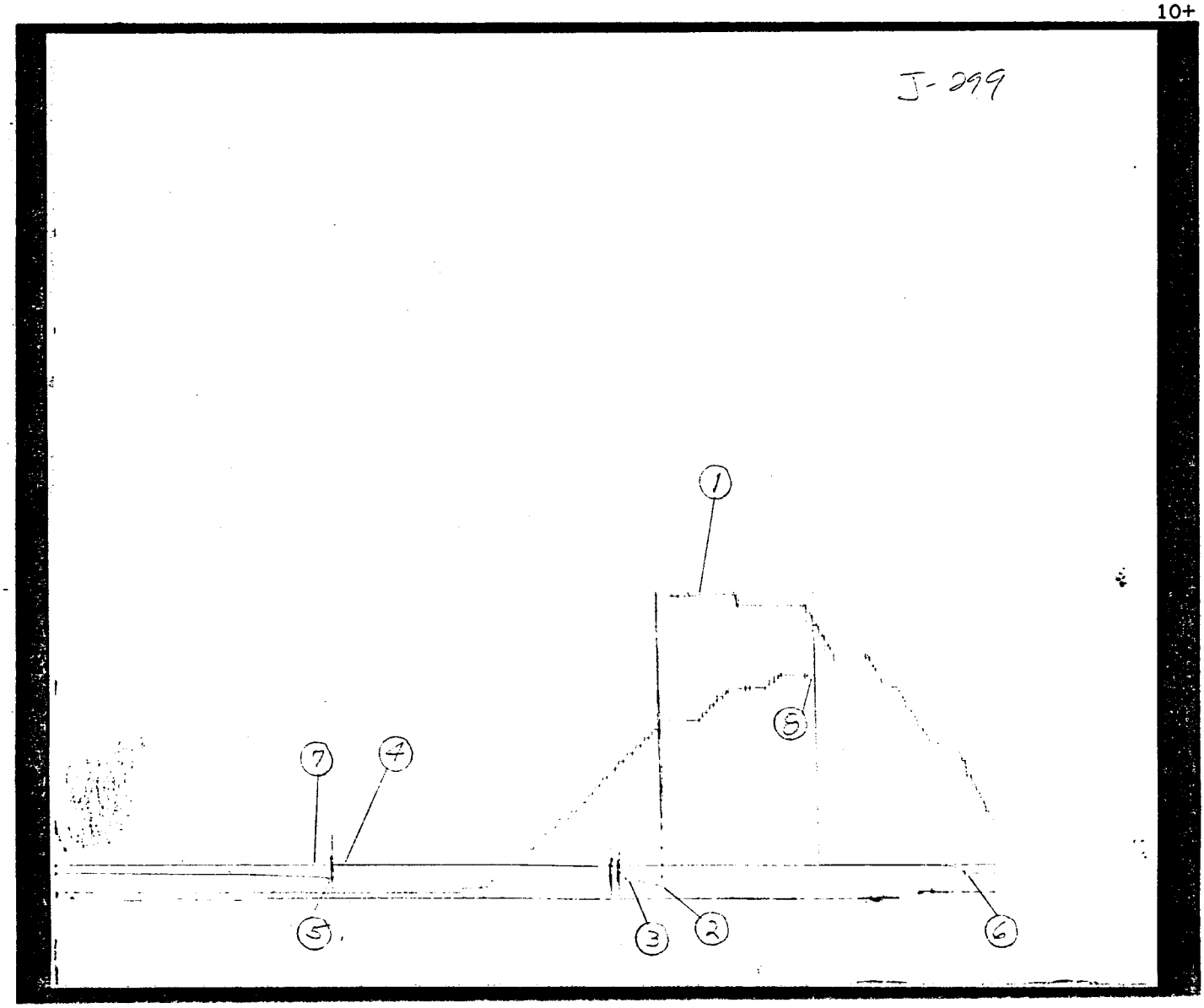
INSTRUMENT NO.: J-299 CAPACITY (P.S.I.): 4700# DEPTH 4995 FT.

PORT OPENING: INSIDE BOTTOM HOLE TEMP.: 122°F. FIELD REPORT NO. 22698 D

DESCRIPTION	LABELED POINTS	PRESSURE (P.S.I.)	GIVEN TIME	COMPUTED TIME
INITIAL HYDROSTATIC MUD	1	1781.9		
INITIAL FLOW (1)	2	67.9		
INITIAL FLOW (2)	3	120.7	10	10
INITIAL SHUT-IN	4	204.6	82	80
SECOND FLOW (1)				
SECOND FLOW (2)				
SECOND SHUT-IN				
FINAL FLOW (1)	5	122.6		
FINAL FLOW (2)	6	153.7	91	87
FINAL SHUT-IN	7	201.8	180	183
FINAL HYDROSTATIC MUD	8	1310.5		

REMARKS:

10+



JOHNSTON
Schlumberger

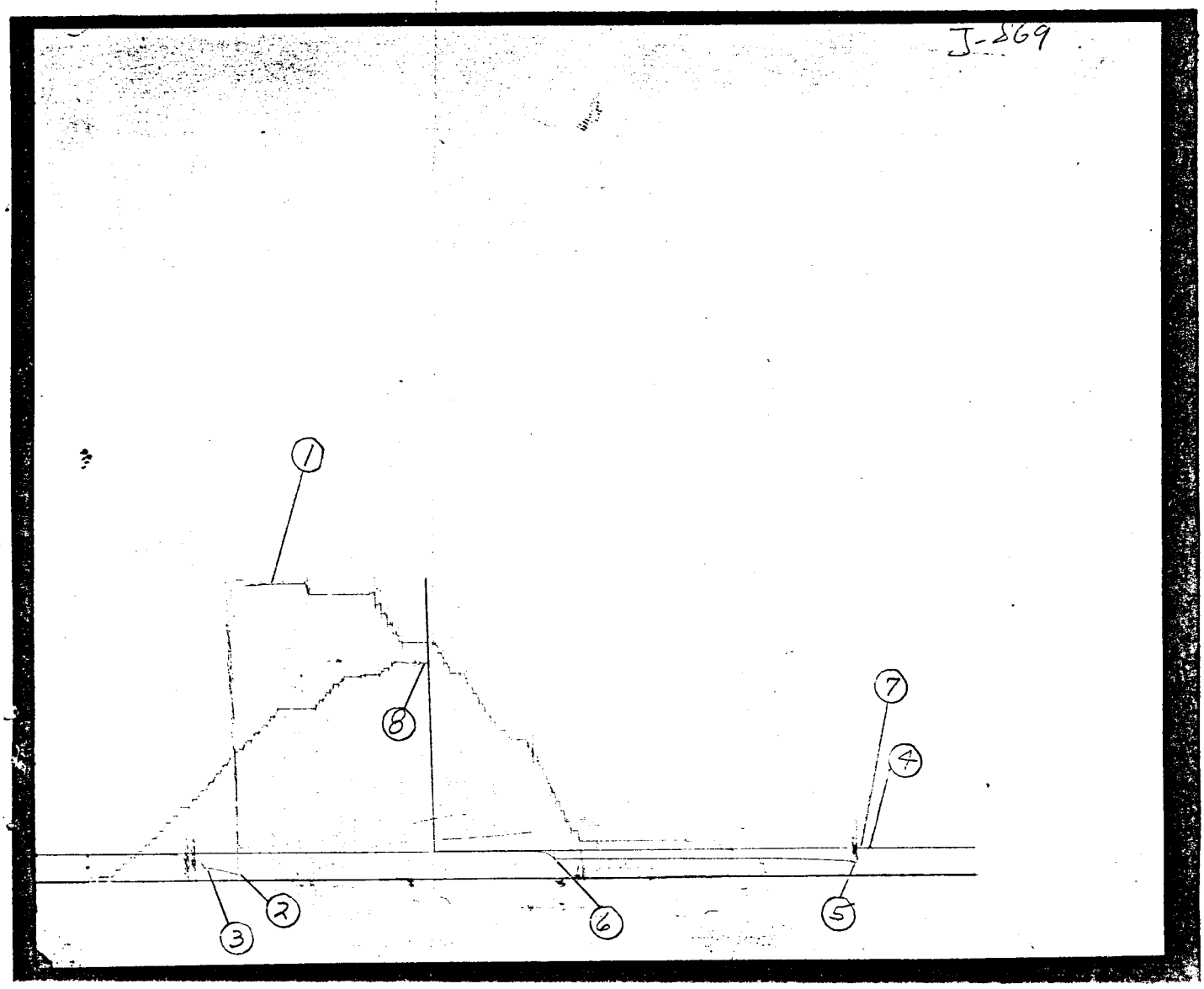
FIELD REPORT NO.: 22698 D

INSTRUMENT NO.: J-869

CAPACITY: 4700#

NO. OF REPORTS: 10+

PRESSURE DATA FROM THIS CHART IS PRESENTED ON NEXT PAGE



BUTT HOLE PRESSURE AND TIME D A

JOHNSTON Schlumberger

INSTRUMENT NO.: J-869 CAPACITY(P.S.I.): 4700 DEPTH: 4999 FT.

PORT OPENING: INSIDE BOTTOM HOLE TEMP.: 122 PAGE 1 OF 3

DESCRIPTION	LABELED POINTS	PRESSURE (P.S.I.)	GIVEN TIME	COMPUTED TIME
INITIAL HYDROSTATIC MUD	1	1742.8		
INITIAL FLOW(1)	2	36.9		
INITIAL FLOW(2)	3	81.2	10	10
INITIAL SHUT-IN	4	162.2	82	80
FINAL FLOW(1)	5	84.0		
FINAL FLOW(2)	6	115.1	91	87
FINAL SHUT-IN	7	165.1	180	183
FINAL HYDROSTATIC MUD	8	1271.5		

INCREMENTAL READINGS

LABEL POINT	DELTA TIME	PRESSURE (P.S.I.)	T + DT/DT	LOG	PW - PF (P.S.I.)	COMMENTS
1		1742.8				HYDROSTATIC MUD
2	0	36.9				INITIAL FLOW(1)
	5	65.1				
3	10	81.2				INITIAL FLOW(2)
3	0	81.2				STARTED SHUT-IN
	3	82.1	4.333	0.637	0.9	
	6	136.8	2.667	0.426	55.6	
	9	159.4	2.111	0.325	78.2	
	12	159.4	1.833	0.263	78.2	
	15	159.4	1.667	0.222	78.2	
	18	159.4	1.556	0.192	78.2	
	21	160.3	1.476	0.169	79.2	
	24	160.3	1.417	0.151	79.2	
	27	160.3	1.370	0.137	79.2	
	30	160.3	1.333	0.125	79.2	
	36	160.3	1.278	0.106	79.2	
	42	161.3	1.238	0.093	80.1	
	48	161.3	1.208	0.082	80.1	
	54	161.3	1.185	0.074	80.1	
	60	162.2	1.167	0.067	81.1	
	66	162.2	1.152	0.061	81.1	
	72	162.2	1.139	0.056	81.1	
	78	162.2	1.128	0.052	81.1	
4	80	162.2	1.125	0.051	81.1	INITIAL SHUT-IN
5	0	84.0				FINAL FLOW(1)
	5	93.4				
	10	98.1				
	15	102.8				
	20	105.7				
	25	108.5				
	30	108.5				
	35	108.5				
	40	108.5				
	45	109.4				
	50	111.3				

LABEL POINT	DELTA TIME	PRESSURE (P.S.I.)	T + DT/DT	LOG	PW - PF (P.S.I.)	COMMENTS
	55	112.3				
	60	112.3				
	65	113.2				
	70	114.2				
	75	114.2				
	80	114.2				
	85	114.2				
6	87	115.1				FINAL FLOW(2)
6	0	115.1				STARTED SHUT-IN
	1	130.2	88.000	1.944	15.1	
	2	143.4	44.500	1.648	28.3	
	3	152.8	30.000	1.477	37.7	
	4	156.6	22.750	1.357	41.5	
	5	157.5	18.400	1.265	42.4	
	6	158.5	15.500	1.190	43.4	
	7	159.4	13.429	1.128	44.3	
	8	159.4	11.875	1.075	44.3	
	9	160.3	10.667	1.028	45.2	
	10	160.3	9.700	0.987	45.2	
	11	160.3	8.909	0.950	45.2	
	12	161.3	8.250	0.916	46.2	
	15	161.3	6.800	0.833	46.2	
	18	162.2	5.833	0.766	47.1	
	21	162.2	5.143	0.711	47.1	
	24	162.2	4.625	0.665	47.1	
	27	163.2	4.222	0.626	48.1	
	30	163.2	3.900	0.591	48.1	
	36	163.2	3.417	0.534	48.1	
	42	163.2	3.071	0.487	48.1	
	48	163.2	2.812	0.449	48.1	
	54	163.2	2.611	0.417	48.1	
	60	163.2	2.450	0.389	48.1	
	66	163.2	2.318	0.365	48.1	
	72	163.2	2.208	0.344	48.1	
	78	163.2	2.115	0.325	48.1	
	84	163.2	2.036	0.309	48.1	
	90	164.1	1.967	0.294	49.0	
	96	164.1	1.906	0.280	49.0	
	102	164.1	1.853	0.268	49.0	
	108	164.1	1.806	0.257	49.0	
	114	164.1	1.763	0.246	49.0	
	120	164.1	1.725	0.237	49.0	
	126	164.1	1.690	0.228	49.0	
	132	165.1	1.659	0.220	50.0	
	138	165.1	1.630	0.212	50.0	
	144	165.1	1.604	0.205	50.0	
	150	165.1	1.580	0.199	50.0	
	156	165.1	1.558	0.192	50.0	
	162	165.1	1.537	0.187	50.0	
	168	165.1	1.518	0.181	50.0	
	174	165.1	1.500	0.176	50.0	
	180	165.1	1.483	0.171	50.0	
7	183	165.1	1.475	0.169	50.0	FINAL SHUT-IN

LABEL POINT	DELTA TIME	PRESSURE (P.S.I.)	T + DT/DT	LOG	PW - PF (P.S.I.)	COMMENTS
8		1271.5				HYDROSTATIC MUD

JOHNSTON Schlumberger

BOTTOM HOLE PRESSURE AND TIME DATA

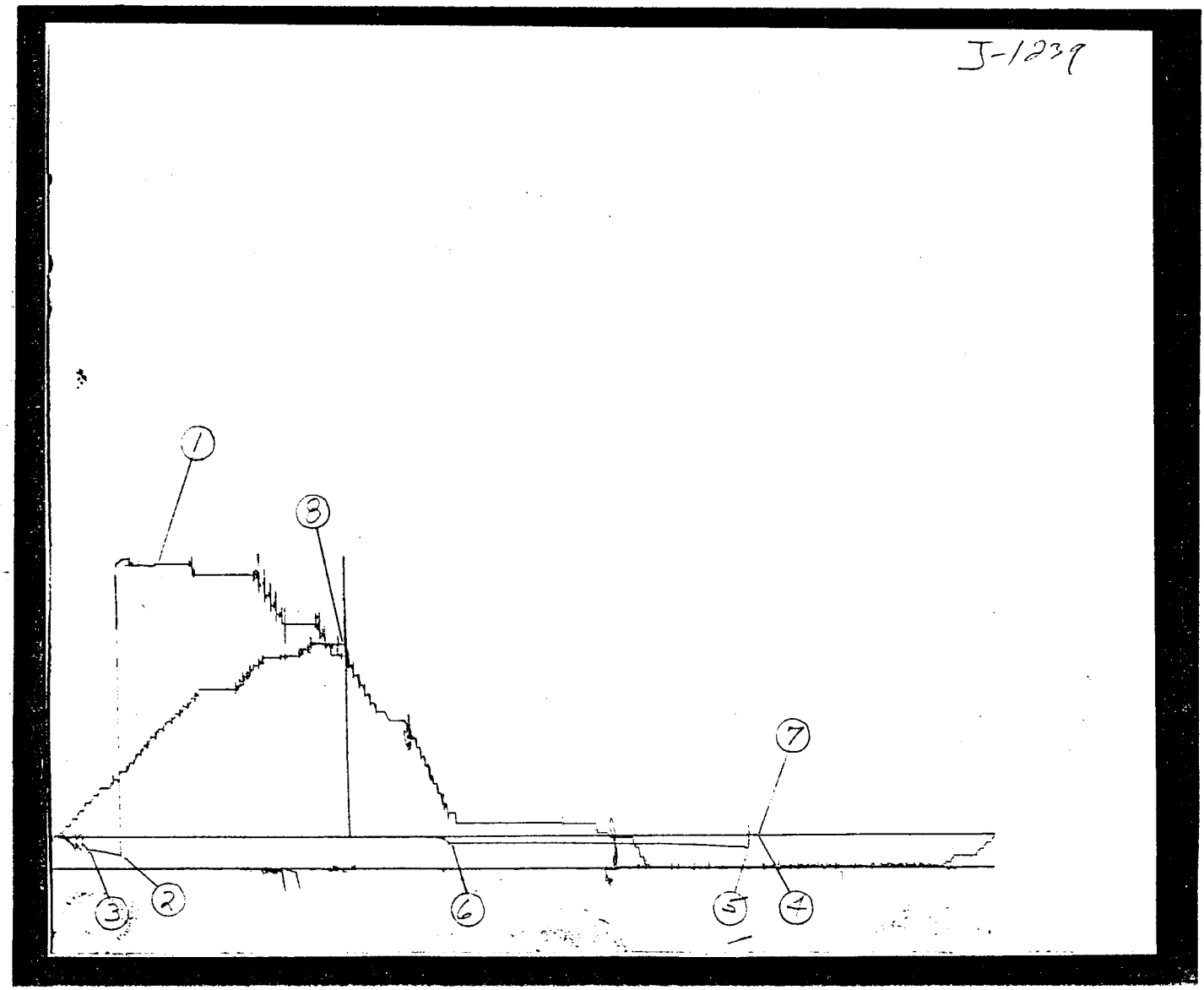
INSTRUMENT NO.: J-1239 CAPACITY (P.S.I.): 4700# DEPTH 5003 FT.

PORT OPENING: OUTSIDE BOTTOM HOLE TEMP.: 122°F. FIELD REPORT NO. 22698 D

DESCRIPTION	LABELED POINTS	PRESSURE (P.S.I.)	GIVEN TIME	COMPUTED TIME
INITIAL HYDROSTATIC MUD	1	1797.1		
INITIAL FLOW (1)	2	85.5		
INITIAL FLOW (2)	3	123.2	10	10
INITIAL SHUT-IN	4	192.2	82	80
SECOND FLOW (1)				
SECOND FLOW (2)				
SECOND SHUT-IN				
FINAL FLOW (1)	5	118.5		
FINAL FLOW (2)	6	153.4	91	87
FINAL SHUT-IN	7	192.2	180	183
FINAL HYDROSTATIC MUD	8	1322.2		

REMARKS:

10+

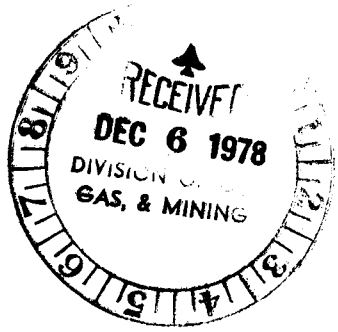


SHELL OIL COMPANY

P.O. BOX 831
HOUSTON, TEXAS 77001

December 4, 1978

Re: Well No. Federal-Harvey 1-10R
Section 10, T32S, R1E
Garfield County, Utah



State of Utah
Department of Natural Resources
Division of Oil, Gas & Mining
1588 West North Temple
Salt Lake City, Utah 84116

Gentlemen:

In response to your letter of similar caption dated November 20, 1978, please hold data for the subject well in a confidential category.

Thank you.

Yours very truly,

T. L. Bezzerides
District Geologist
Western Division

TLB:jw

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: U-20707

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal-Harvey

9. WELL NO.: 1-10R

10. FIELD AND POOL, OR WILDCAT: Wildcat - Zinc

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW/4 NW/4 Section 10-T32S-R1E

12. COUNTY OR PARISH: Garfield

13. STATE: Utah

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

2. NAME OF OPERATOR: Shell Oil Company

3. ADDRESS OF OPERATOR: 1700 Broadway, Denver, Colorado 80290

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1089' FWL & 1289' FNL Section 10

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 9746 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[X]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

TD 8728.
24" csg @ 700'
16" csg @ 1538'
9-5/8" csg @ 3440'
7-5/8" csg @ 5000'
5-1/2" csg @ 8048'
PB to 6846 - above Elephant Canyon
Perf Toroweap 5514-5692 - 5-1/2 csg
5-1/2" Baker Modl D @ 5460'
Cut off 5-1/2" @ 4610'
7-5/8" RBB @ 4456'
Perf Shinarump 4110-4290
7-5/8" FB packer @ 3306'
2-7/8" tbg to surface
5000# wellhead Otis BP in 2-7/8 @ 3250'
BP valve @ surface
Wellhead chained to csg head w/chain lock
Valve wheels removed
Will P&A in summer of 1979

Verbal approval given Mr. J. Beard by Mr. E. W. Guynn.

APPROVED BY THE DIVISION OF OIL, GAS, AND MINING
DATE: 3-8-79
BY: M.J. M.

RECEIVED MAR 5 1979

18. I hereby certify that the foregoing is true and correct

SIGNED L. Plauty TITLE Div. Opers. Engr. DATE 2/28/79

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

cc: J. Beard
Utah O&GCC

*See Instructions on Reverse Side

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

RECEIVED
MAY 14 1979
DIVISION OF OIL, GAS, & MINING

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other SI

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Shell Oil Company

3. ADDRESS OF OPERATOR: 1700 Broadway, Denver, Colorado 80290

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1289' FNL & 1089' FWL Section 10
At top prod. interval reported below
At total depth

PERMIT NO. | DATE ISSUED

5. LEASE DESIGNATION AND SERIAL NO.: U-20707
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Federal-Harvey
9. WELL NO.: 1-10R
10. FIELD AND POOL, OR WILDCAT: Wildcat - Zinc
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: NW/4 NW/4 Section 10-T32S-R1E
12. COUNTY OR PARISH: Garfield
13. STATE: Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
6/28/78	10/25/78	SI 2/28/79 RD Sept 28	9764 KB	-

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
8728	4456	-	→	0-TD	-

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: Shinarump 4110-4290

25. WAS DIRECTIONAL SURVEY MADE: Yes - Totco

26. TYPE ELECTRIC AND OTHER LOGS RUN: DIL/SP/GR, DIL8/SP/GR, FDC/CNL/GR/Cal, BHC/GR/Cal

27. WAS WELL CORED: Yes

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
24"	-	700'	28"	850 sx "B"	
16"	75#	1538'	23"	950 sx "G"	
9-5/8"	40#	3440'	14-3/4"	1110 sx "B"	
7-5/8"	33.7#	5000'	8-3/4"	160 sx "B"	
5-1/2"	17#	8048'	6-1/2"	158 sx "B"	3338

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"		3306

31. PERFORATION RECORD (*Interval, size and number*)
Elephant Canyon 7266-47, 7245-22, 7227-14, 7213-7200 & 7031-20(4 shots/ft - 23 grm)
Toroweap 5514-5692 (136'/544 holes/23 grm)
Shinarump 4110-4290 (160'/640 holes/23 grm)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
7266-7020	4000 gals 15% HCl
5514-5692	1500 gals 15% HCl
4110-4290	6500 gals 15% HCl (Sqzd cmt to 6846. Lead seal @ 4610 - 5-1/2" csg stub)

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
2/12/79	Flowing	Shut-in

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
2/13/79	47	32&64/64		0	Various Rates	0	-

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
30-50	0		0	750	0	-

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): CO_2 Gas - Shut-in

TEST WITNESSED BY: M. G. Gray

35. LIST OF ATTACHMENTS: Well History

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Sr. Engr. Tech. DATE 5/9/79

*(See Instructions and Spaces for Additional Data on Reverse Side)

cc: Utah O&GCC
J. Beard

M.L. Lease date: 9/28/78

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
DST #1 - Kaibab	4950	5364	Rec'd approx 10 bbls sli gas-cut mud, IH 1782, IF 68-121, ISI 205, FF 123-154, FSI 202, FH 1311 (10/82/91/180 mins).
Core #1 5289-5323; cut 34' & rec'd 28'			
Core #2 5323-5346; cut 23' & rec'd 18'			
Core #3 5346-5364; cut 18' & rec'd 16'			
Core #4 5905-5914; cut 9' & rec'd 7'			
Core #5 5914-5933; cut 18' & rec'd 5.5'			

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Navajo	1718 (8046)	
Kayenta	3040 (6724)	
Wingate	3140 (6624)	
Chinle	3628 (6136)	
Shinarump	4109 (5655)	
Moenkopi	4328 (5436)	
Timpoweap	5035 (4729)	
Kaibab	5272 (4492)	
Toroweap	5388 (4376)	
Cedar Mesa	5912 (3852)	
Elephant Canyon	6754 (3010)	
Atoka	7501 (2263)	
Redwall	7692 (2072)	

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-683636
837-497
871-233

Form OGC-1b

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Shell Oil Company

3. ADDRESS OF OPERATOR: P.O. Box 831 Houston, Tx 77001 ATTN: P.G. Geling Rm. #6459 WCK

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

5. LEASE DESIGNATION AND SERIAL NO.: U-20707

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: FEDERAL-HARVEY

9. WELL NO.: 1-10R

10. FIELD AND POOL, OR WILDCAT: WILDCAT - ZINC

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: NW/4 NW/4 T32S R1E

12. COUNTY OR PARISH: GARFIELD

13. STATE: UTAH

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 9764' KB

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☒	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

SEE ATTACHED

APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 4/30/82
BY:

RECEIVED
APR 30 1982
DIVISION OF OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED W. F. N. KELLDORF TITLE DIVISION PROD. ENGINEER DATE 4-28-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

PLUG AND ABANDONMENT WORKSHEET
SHELL-HARVEY FEDERAL 1-10R
SECTION 10, T32S, R1E
ZINC AREA WILDCAT
GARFIELD COUNTY, UTAH

Pertinent Data:

Elevation (KB): 9760'
Elevation (GL): 9746'
TD: 8048'
PBTD: 5460'
Casing: 24" 700'; 16" 1538'; 9-5/8" 40# 3440'; 7-5/8" 33.7# 3278'/5000'
Perforations: Effective: 4110'/4210', 4230'/4290'
Ineffective: (Cemented) 5514'/5692', 7020'/7031', 7200'/7266'
Parasite 2-1/16" tubing, one at 1479' depth, one at 2800' depth.

Objective: Permanently plug and abandon.

Procedure:

1. MIRU. Install and test BOPE as per field specs.

2. Pull 2-7/8" Otis D.W. choke plug at 3250' and kill well if necessary.

3. POOH with 2-7/8" tubing + 7-5/8" Baker fullbore packer set at 3306'.

4. RIH with 177± jts. 2-7/8" tubing. Tag 5-1/2" Model "D" packer at 5460'. Fill casing with clay base mud.

5. Spot 125 lineal foot plug (estimated 15 sacks, no excess) of Class "H" cement on top of 5-1/2" Model "D" packer at 5460'.

6. Spot 125 lineal foot plug (estimated 22 sacks, no excess) of Class "H" cement centered across 5-1/2" casing stub at 4610'.

7. Spot 300 lineal foot plug (estimated 70 sacks, no excess) of Class "H" cement centered across perfs in 7-5/8" casing at 4110'/4210', 4230'/4290'.

8. Spot 125 lineal foot plug (estimated 45 sacks, no excess) of Class "H" cement centered across 7-5/8" casing. Top at 3278'.

9. Fill two parasite 2-1/16" tubing lines, one to 1479' (between 24" casing and 16" casing) with (estimated 5 sacks, no excess) Class "H" cement; one to 2800' (between 16" casing and 9-5/8" casing) with (estimated 9 sacks, no excess) Class "H" cement. Note: 2-7/8" tubing should be pulled up above 2800' to avoid possible cementing of 2-7/8" tubing in hole.

10. Spot 15 sacks of Class "H" cement slurry 5'± below surface in the 9-5/8" casing. Note: All casing annuli are reported to have cement to surface but each should be checked.

11. Cut all casings at 5'± below surface.

12. Lay down 2-7/8" tubing and move rig off loc.

13. Weld 1/4" steel cover plate across top of 24" casing. Restore surface location. Set abandoned well marker. Marker should be minimum 4" in diameter and not less than 10' in length, of which 4' shall be above ground level. The remainder being securely embedded in cement. The top of the pipe must be permanently sealed. Complete well identification shall be permanently set on the marker post.

Recommended_____ Approved_____

Date_____

BJH:SJP
11/19/81

ALTAMONT OPERATIONS
DAILY COMPLETIONS AND REMEDIALS REPORT
WELL HISTORY FOR 427
ISSUED 01/24/83

WELL	HARVEY FEDERAL 1-10R
LABEL	FIRST AND LAST REPORT
AFE	573961
FOREMAN	K. J. DESHOTEL
RIG	WOW 29
OBJECTIVE	P AND A
CUM COST	60000
DATE	OCT 4, 1982 THUR OCT 13, 1982
ACTIVITY	OCT 4, 1982 MOVE RIG AND EQUIPT FROM ROOSEVELT UTAH TO BICKNELL UTAH. STARTED MOVING EQUIPT FROM BICKNELL UTAH TO LOCATION ON MORNING OF OCT. 5, 1982. OCT. 6, 1982 THUR OCT 13, 1982 STARTED P AND A OF WELL. RU DOWELL TO PLUG FOR ABANDONMENT. PUMPED 2 BBLS. FRESH WATER (USING CLASS H CEMENT FOR ENTIRE JOB). SET FIRST 15 SACKS PLUG AT 5442', SET SECOND 22 SACKS PLUG AT 4633'. WOC FOR 5 HRS. PUMPED THIRD 70 SACKS PLUG AT 4206'. SET FOURTH PLUG AT 3397' W/90 SACKS OF CLASS H CEMENT, AFTER WOC, TAGGED CEMENT. SET FIFTH PLUG ABOVE 3397' W/100 SACKS CEMENT WOC. SET SIXTH PLUG AT 1220 W/120 SACKS CEMENT WOC. PUMPED 18 SACKS CEMENT 40' TO SURFACE TO CAP WELL. PUMPED 12 SACKS CEMENT DOWN PARASITE LINE TO COMPLETE JOB. LOCATION WAS RESTORED AND INSPECTED BY FOREST SERVICE AND APPROVED P AND A MARKER WAS SET AND CELLAR COVERED OVER. TOTAL COST 60000.

Form OGCC-3

STATE OF UTAH

OIL & GAS CONSERVATION COMMISSION

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other P&A

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Shell Oil Company ATTN: B. T. Ellison 6486 WCK.

3. ADDRESS OF OPERATOR: P. O. Box 831 Houston, Tx. 77001

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1289' FNL & 1089' FWL Sec. 10
At top prod. interval reported below
At total depth

5. LEASE DESIGNATION AND SERIAL NO.: U-20707

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal-Harvey

9. WELL NO.: 1-10R

10. FIELD AND POOL, OR WILDCAT: Wildcat - Zinc Area

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 10 T32S R1E NW/4 NW/4

12. COUNTY OR PARISH: Garfield

13. STATE: Utah

14. PERMIT NO.: 43-017-30074 DATE ISSUED:

15. DATE SPUDDED: 6/28/78

16. DATE T.D. REACHED: 10/25/78

17. DATE COMPL. (Ready to prod.): P&A'd (10-13-82) ✓

18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: KB 9764'

19. ELEV. CASINGHEAD:

20. TOTAL DEPTH, MD & TVD: 8728'

21. PLUG, BACK T.D., MD & TVD: 4456'

22. IF MULTIPLE COMPL., HOW MANY*:

23. INTERVALS DRILLED BY: →

ROTARY TOOLS: 0-TD

CABLE TOOLS:

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: P&A'd

25. WAS DIRECTIONAL SURVEY MADE: Yes - Totco

26. TYPE ELECTRIC AND OTHER LOGS RUN:

27. WAS WELL CORED: Yes

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
~~24"~~		~~700'~~	~~28"~~	~~850 sx~~	
16"	75#	1538'	23"	950 sx	
9-5/8"	40#	3440'	14-3/4"	1110 sx	
7-5/8"	33.7"	5000'	8-3/4"	160 sx	
5-1/2"	17#	8048'	6-1/2"	153 sx	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION: | PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*): | WELL STATUS (*Producing or shut-in*): P&A'd

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): TEST WITNESSED BY:

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Bart T. Ellison TITLE Div. Prod. Engr. DATE February 11, 1983

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.
If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.
Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.
Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.
Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.
Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.
Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
DST #1 - Kaibab	4950	5364	Rec'd approx 10 bbls. sli-gas cut mud. IH 1782, IF 68-121, ISI 205, FF 123-154, FSI 202, FH 1311, (10/28/91/180 mins).
Core #1	5289	5323	Cut 34' Rec'd 28'
Core #2	5323	5346	Cut 23' Rec'd 18'
Core #3	5346	5364	Cut 18' Rec'd 16'
Core #4	5905	5914	Cut 9' Rec'd 7'
Core #5	5914	5933	Cut 18' Rec'd 5.5'

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Navajo	1718 (-8046)	
Kayenta	3040 (-6724)	
Wingate	3140 (-6624)	
Chinle	3628 (-6136)	
Shinarump	4109 (-5655)	
Moenkopi	4328 (-5436)	
Timpoweap	5035 (-4729)	
Kaibab	5272 (-4492)	
Toroweap	5388 (-4376)	
Cedar Mesa	5912 (-3852)	
Elephant Canyon	6754 (-3010)	
Atoka	7501 (-2263)	
Redwall	7692 (-2072)	

Form OGC-1b

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

5. LEASE DESIGNATION AND SERIAL NO.: U-20707

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER Plugged and Abandoned

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Shell Oil Company ATTN: B. T. Ellison 6486 WCK.

8. FARM OR LEASE NAME: Federal-Harvey

3. ADDRESS OF OPERATOR: P. O. Box 831 Houston, Tx. 77001

9. WELL NO.: 1-10R

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1289' FNL & 1089' FWL Sec. 10

10. FIELD AND POOL, OR WILDCAT: Wildcat - Zinc Area

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 10 T32S R1E NW/4 NW/4

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): KB 9764'

12. COUNTY OR PARISH: Garfield

13. STATE: Utah

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)				(Other)			X

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

COMPLETED OPERATIONS
(Oct. 4-13, 1982)

Pumped 2 bbls. fresh water (using class H cmt. for entire job). Set first plug at 5442' w/15 sacks cmt. Set second plug at 4633' w/22 sacks cmt. Set third plug at 4206 w/70 sacks cmt. Set fourth plug at 3397' w/ 90 sacks cmt. Set fifth plug above 3397' w/100 sacks cmt. Set sixth plug at 1220' w/120 sacks cmt. Pumped 18 sacks cmt 40' to surface to cap well. Pumped 12 sacks cmt. down parasite line to complete job. Location was restored and approved P&A marker was set and cellar covered over location.

ACCEPTED
APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING
DATE: 2/14/83
BY:

18. I hereby certify that the foregoing is true and correct

SIGNED B. T. Ellison TITLE Div. Prod. Engr. DATE February 11, 1983

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side